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AMERICAN ARTISAN and Hardware Record

VOL. 85. No. 21. 620 SOUTH MICHIGAN AVENUE, CHICAGO, MAY 26, 1923. $2.00 Per Year.

WE say of the American Boiler Plate Warm Air Heater, *"Built like a Power Boiler"*—that means it's absolutely leak proof—built of heavy steel plate and that it contains the same degree of durability.

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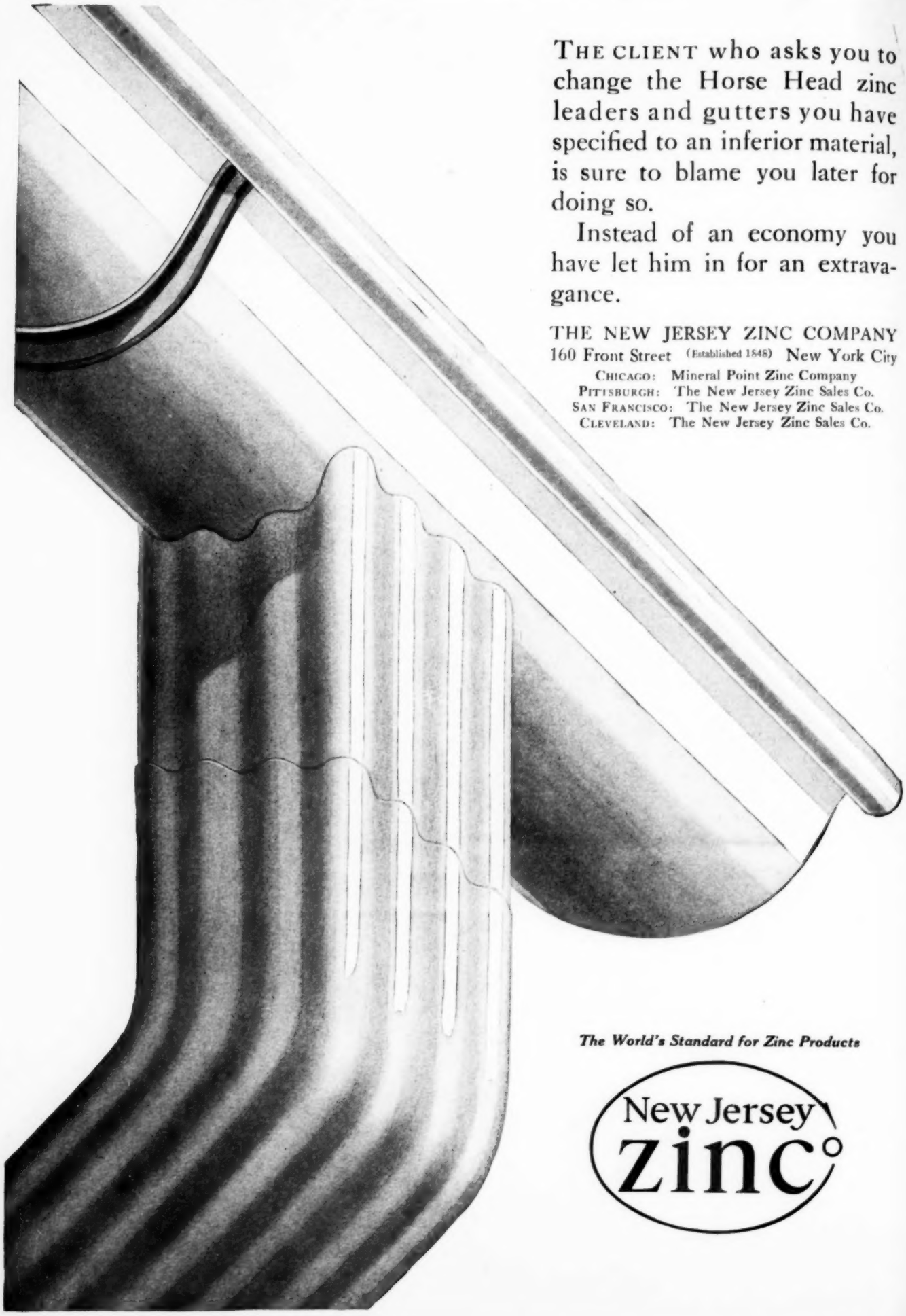

THE CLIENT who asks you to change the Horse Head zinc leaders and gutters you have specified to an inferior material, is sure to blame you later for doing so.

Instead of an economy you have let him in for an extravagance.

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Founded 1880 by Daniel Stern

Thoroughly Covers the Hardware, Stove, Sheet Metal, and Warm Air Heating and Ventilating Interests

AMERICAN ARTISAN and Hardware Record

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HOW IMPORTANT IS PRICE?

Some men are under the impression that they can sell only on a price basis; in other words, intrinsic value makes no difference to them.

To them, a furnace is a furnace; a kitchen range is a kitchen range; a hammer is a hammer; and so on in every line.

And yet these same men will pay higher wages to an efficient workman, to a better salesman, to a better bookkeeper than to those in the same line who are less deserving.

When these men consider the buying of a suit of clothes they will invariably patronize the store that has the reputation of selling only well-made clothing, even though that store, of course, asks a higher price than the clothier whose chief selling point is low price.

Inconsistency, you say.

Of course, it is.

But that does not alter the case.

When they are trying to make a sale of a furnace, they figure their costs down to the bone and if their price is higher than that of a man who is carrying a lower-grade furnace and whose reputation for doing good work is below theirs, they give up, often without an effort to sell their ability to do good work and the higher quality of their furnace.

A furnace is not just a furnace; there are grades and designs which differentiate them, just as there are grades of material and styles in suits and overcoats.

And their most important points are often lost sight of:

That what the installer really sells is not just a quantity of cast iron and sheet metal, but an apparatus for heating and ventilating a place in which to live.

That what he is selling is not so many hours of work, but the service that apparatus which he installs will render to the purchaser.

That what he sells is not the amount of heat the furnace will produce, but the properly distributed warm, fresh air.

That what he is selling is not so much the first cost as it is lasting satisfaction.

That the lower price can never compensate for failure in any of these respects.

Now then—

Should a price ever be quoted on a furnace in an advertisement?

You might as well ask whether a high-class clothier should quote prices in his advertisements.

That's not a matter for discussion, for it has already been definitely decided that it is good policy to do so, by the very fact that such concerns as Capper & Capper, who are known from coast to coast as retailers of the highest type of ready-made clothing, have built up their success on that policy.

What good does the quoting of a price do?

Simply this—that the person who is considering the purchase of a furnace is informed that a high-grade furnace, properly installed, costs less than he might otherwise think.

While price is relatively of less importance than many other factors in the sale, it must be quoted some time.

Why not get it over with?

Random Notes and Sketches.

By Sidney Arnold

Here is one of the latest contributions to this page from Fred Nesbit, of the Standard Furnace and Supply Company:

A certain subject had been suspected of being half-witted, or something of that sort, and the M. D.'s were putting him over a series of mental hazards. One hypothetical question meandered along this way:

"Now, if you were passing a house where the curtains were lowered, and you saw a man you knew to be a doctor go in rather hurriedly, and a little while later a preacher entered, and a few minutes after him an undertaker drove up to the door, what would you surmise had happened in that house?"

Perkins grinned sheepishly, scraped his toe thoughtfully across the floor, and finally answered:

"Well, sir, I'd think they had a still in there."

"The man's perfectly sane," snapped the head examiner.

* * *

"A guarantee may be good," says Blair Quick, of the Quick Furnace & Supply Company, "and then again it may not be worth much," and then he proceeded to elucidate by telling the following:

A man had bought a dog and the next day the dog bit one of the youngsters of his family. Forthwith he went to the seller.

"See here, didn't you tell me that dog you sold me yesterday had never bitten anybody?"

"That's what I said, mister, and he ain't. We always had sense enough to keep a muzzle on him."

* * *

Harry Squibbs, of the American Steel and Wire Company, has a daughter about six years of age, who is not only likely to develop into a fine dancer, but also can stand up for her "rights," as witness the following conversation which took place between Bobby, a playmate of hers, and his mother:

Little Bobby, who had been playing with the young Miss Squibbs, came sobbing to his mother one day and declared that his playmate had pulled his hair.

"Why, Bobby," his mother gasped, "I thought she was such a nice little girl that she would never do a thing like that."

"So did I," wailed Bobby. "That's why I kicked her."

* * *

W. R. Cameron, Manager of the Trade Promotion Department of the Fox Furnace Company, recently sent me the following letter with copy of an order mailed to their representative in Alaska:

DEAR SIDNEY ARNOLD:

I have been quite interested in your column which sort of adds a little levity to our everyday work, so today when I received the attached copy from our distributor in Alaska, I thought you would be interested in it for your paper.

Mr. Forrest tells us that this is an exact copy of a letter from a native that he received ordering repairs for an engine.

After reading this over, you wonder just what is ordered, but nevertheless, it is our duty to give service, because gasoline surely can't run upstairs.

I enjoyed very much meeting you at the National Warm Air Heating & Ventilating Association and can honestly say that I appreciate your paper very much.

Yours very truly,
W. R. CAMERON,
Manager Trade Promotion.

Here is Billie Jackson's letter to Mr. Forrest:

I am going to write you just a few lines to let you know. You know that, theres no Standard tols in this cannery. the matter is. one of the intacke spengs, Broke Valve intack broke and please sent me three Please Piences of intacke spengs for Valve intacke spengs.

I want three pieces Please.
Sent it to me.
Just the speng for
8 horse power.
Sent it over right away Please.

Valve intacke speng not the gas intacke does big once just the speng.

I want three pieces soon is you shipping got here I'll sent the money to you! That is all I going to say to you.

Yours truly,
BILLIE JACKSON.

P. S.—When speng gone engine she don cough, gas cant go up stairs, hurry please to me.

* * *

Here is a bit of conversation overheard in the foundry room of the Wise Furnace Company:

Casey: "The judge gave Murphy thirty days just fer fightin'."

Callahan: "Ain't that grand, an' won't he have th' fine time? Thirty days set aside jest fer fightin'!"

* * *

Max Baugh, of the Meyer Furnace Company, was asked the other day how he obtained and kept such nice rosy cheeks and his rotund appearance. His reply was in form of a story, as follows:

Ragged Robin: "How d'ye manage ter keep so nice an' plump, Dusty?"

Dusty Rhodes: "I eats. An' de way I gets it ter eat is dis. I goes ter de kitchen door an' offers ter saw wood fer a meal. Den when de lady of de house faints away I helps meself."

* * *

"Some people seem to enjoy throwing cold water on the enthusiasm of others," writes H. E. Hessler, the Syracuse manufacturer of hose couplings, roof flanges, furnace repairs, etc. "such as the actor's friend in the following story:

"The tragedian, whose success had not been startling, had just signed a contract to tour South Africa and Australia. Exultantly he told a friend of it, but the latter shook his head dismally.

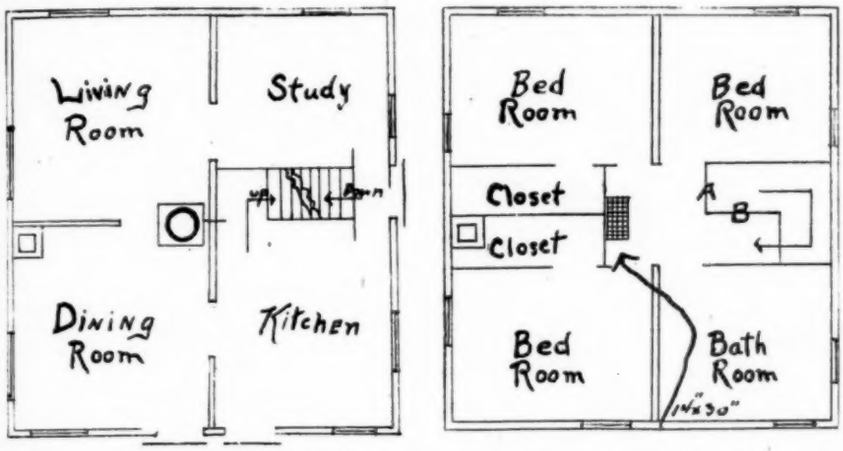
" 'The ostrich,' he explained in a pitying tone, 'lays an egg weighing anywhere from two to four pounds.' "

Sedgwick Furnishes Solution of Pipeless Furnace Problem Presented by G. W. Turton.

Maintains That Stairway to Second Floor Should Be Enclosed All the Way Up.

A NUMBER of articles have been published in recent issues of AMERICAN ARTISAN in which installers have presented their solutions to the pipeless furnace problem presented by George W. Turton on pages 91 and 92 of our 1922 Warm Air Furnace Special.

Herewith is one more—and the discussion is still open. The following letter is from F. G. Sedgwick, of the Waterman-Waterbury Company, Minneapolis, Minnesota.



This Shows How F. G. Sedgwick of Waterman-Waterbury Company, Minneapolis, Would Solve Pipeless Furnace Problem Presented by George W. Turton.

To AMERICAN ARTISAN:

On my return from Cleveland where I attended the meeting of the National Warm Air Heating and Ventilating Association, the office called my attention to George Washington Turton's request on page 15 of your April 14th issue for my opinion as to how a pipeless furnace should be installed in the house, a plan of which was drawn on page 92 of your issue of December 30, 1922, Warm Air Furnace Special.

I am enclosing a tracing of the plan given on page 92 of the December 30, 1922 issue, in which I have drawn the suggestion which has been followed out with satisfactory results in many similar cases.

Briefly, the suggestion consists of the installation of the furnace register in the archway between the dining room and living room with a grill in the ceiling directly over this register, and a grill in the floor of the hall directly above the grill in the ceiling. Care should be taken to stop the ends of the spaces between the joists so that the air will be conducted directly into the upstairs hall.

If there is an overhang over the archway, it would be necessary to install two smaller grills, one on each side of the partition in the ceiling connected to the larger grill in the floor above, but the principle would be exactly the same.

The grill to be used in the floor and ceiling should be a wood grill at least 14 by 30 inches in size. We figure roughly one square inch of free grill area to each 20 cubic feet of room to be heated through that grill.

We have found where installations are made in this manner that the temperature of the upstairs can be raised almost degree for degree with that of the downstairs.

Our experience has shown us that the spindle railing at "A" and "B" described by Mr. Turton makes it impossible to use the stairway for the rising air current. An examination of the plan will disclose the fact that the cold air returning from the three bedrooms and from the bathroom will very naturally flow down into the stair well through the spindle railing acting just like a waterfall or curtain and preventing the warm air from rising into the stair well from below.

Our experience is that even if this railing were solid, the cold air would tend to flow down over the railing and blanket the warm air attempting to rise, and that the only safe stairway in such a location is one that is completely enclosed to the second floor ceiling, thus forcing the returning cold air to follow down the stairway.

The principles involved in this discussion are very clearly outlined in a booklet published by us, entitled "Heating Facts," page 15. Copy of this booklet will be sent to anyone interested enough to make inquiry for it and who mentions this article.

F. G. SEDGWICK.

Minneapolis, April 26, 1923.

Heckler Brothers Confine Their Business to Furnaces, Stoves and Ranges.

Heckler Brothers, furnaces and hardware, 919 Liberty Avenue, Pittsburgh, have discontinued the hardware store, which they have conducted for the past eighteen years, in order that they may devote their entire activities to the manufacturing and jobbing of furnaces and stoves, in addition to their regular installing department. The step has been deemed desirable in view of the remarkable growth of this business within the past few years.

The hardware stock and fixtures have been sold to George J. New's Sons, Blairsville, Pennsylvania. The company will continue to occupy its entire eight-floor building, but the first floor will now be devoted to the display of furnaces, stoves and ranges instead of hardware, as heretofore.

Naturally you can't expect the man to make progress who is all right in his own way.

Columbus, Ohio, City Council Amends Sections of Heating Code.

Ordinance Regulating Installation of Warm Air, Steam and Hot Water Heating Boilers Changed.

THE City Council of Columbus, Ohio, has passed an ordinance to amend the Heating Code passed February 10, 1919.

The sections amended are hereinafter enumerated and the amendments given.

Ordinance No. 33,983—To amend Sections 117, 118, 119 and 120 of Ordinance No. 31,200, passed February 10, 1919, and known as the Columbus Code of 1919, to regulate the installation of warm air furnaces, steam and hot water boilers when used for heating purposes in residences or other buildings, and to repeal said original Sections 117, 118, 119 and 120 of said Ordinance No. 31,200.

Be it ordained by the Council of the City of Columbus:

Section 1. That Sections 117, 118, 119 and 120 of Ordinance No. 31,200, known as the Columbus Code of 1919, be and the same are hereby amended so as to read as follows:

Section 117.

In all cases where warm air furnaces and the appurtenances thereto are to be installed or constructed in the City of Columbus, Ohio, the size of warm air pipes, wall stacks and furnaces for use in residences or other buildings shall be determined as follows:

Paragraph 1. First floor rooms.

Divide square feet of glass by 12.

Divide square feet of net exposed wall by 40.

Divide cubic contents by 800.

Add together the above and multiply by 8.

The result is the area of the basement pipe in square inches.

The sum of:

Glass (sq. ft.) ÷ 12.

Net exposed wall (sq. ft.) ÷ 40 x 8 = Area of basement pipe.

Cubic contents = 800.

Paragraph 2. Second floor rooms.

Divide square feet of glass by 12.

Divide square feet of net exposed wall by 40.

Divide cubic contents by 800.

Add together the above and multiply by 6.

The result is the area of the basement pipe in square inches.

The sum of:

Glass (sq. ft.) ÷ 12.

Net exposed wall (sq. ft.) ÷ 40 x 6= Area of basement pipe.

Cubic contents ÷ 800.

Paragraph 3. Third floor rooms.

Divide square feet of glass by 12.

Divide square feet of net exposed wall by 40.

Divide cubic contents by 800.

Add together the above and multiply by 5.

The result is the area of the basement pipe in square inches.

The sum of:

Glass (sq. ft.) ÷ 12.

Net exposed wall (sq. ft.) ÷ 40.

Cubic contents ÷ 800 x 5=—Area of basement pipe.

Method of Determining Size of Wall Stacks.

Paragraph 4. First floor rooms. Same as paragraph 1.

Paragraph 5. Second floor rooms. Deduct 40 per cent from basement pipe area determined in paragraph 2.

Paragraph 6. Third floor rooms. Deduct 40 per cent from basement pipe area determined in paragraph 3.

Transition, Fittings and Stacks.

Paragraph 7. Transition from warm air pipes to stacks shall be made with a well designed elbow or boot and no stack shall be less than 60 per cent of the warm air pipe area.

Method of Determining Size of Registers.

Paragraph 8. All registers shall have a free area at least equal to the calculated area of the basement pipe, transition fitting or stack to which it is connected.

Method of Determining Size of Furnace.

Paragraph 9. Add together the actual warm air pipe area in square inches as obtained in Paragraphs 1, 2 and 3, and select a furnace having a capacity in square inches of not less than the sum of all the warm air pipe areas. The capacity of furnace in square inches shall be determined by adding to the actual area of the grate in square inches 80 per cent of said area, and the result in square inches shall be used as the capacity of the furnace. In no case shall more pipe area in square inches be used than the capacity of the furnace determined by the above rule.

Section 118.

Installation, Location of Furnace.

Paragraph 1. The location of the furnace shall equalize the length of warm air runs as far as possible, yet give necessary preference to pipes supplying living rooms, dining rooms and main halls.

Foundation.

Paragraph 2. Furnace foundation of brick, cement or other incombustible material must be provided. Said foundation to extend at least fifteen inches at rear and sides of furnace casing and at least thirty-six inches in front of furnace casing. Foundation to be level.

Setting or Assembling of Furnace.

Paragraph 3. (a) The base ring of the furnace shall be cemented to the foundation, making an air-tight joint. The furnace parts shall be assembled plumb and level, and in a workmanlike manner.

(b) All sections and joints shall be properly fitted. Joints requiring cement shall be well filled and all bolts shall be drawn up tightly.

Casings.

Paragraph 4. (a) Warm air furnaces shall be enclosed in metal casings or walls of brick, tile or concrete.

(b) Portable, sheet metal casings, including casing tops, shall be made of galvanized sheets, not lighter than 26 U. S. standard gauge. They shall fit the casings and casing rings closely, so as to be dust tight, and shall be securely fastened to the front. The casing shall be lined from the upper casing ring down to a line on a level with the grate.

(c) When side collars are used, the casing top must be of sufficient height so that the largest warm air pipes can be taken from the side without ovaling. In no case shall a distance less than eight inches be maintained between the top of any furnace and the top of casing or bonnet.

(d) Any furnace, the casing top of which shall come within twelve inches of a combustible floor, ceiling, or joints, shall be protected by a metal shield, extending not less than eighteen inches beyond the casing of said furnace. This shield shall be suspended at least two inches below woodwork, allowing free air space between shield and woodwork. No furnace casing or top coming nearer than six inches of ceiling or joists shall be allowed in any case. All metal casing caps to be covered by not less than two inches of magnesia cement.

(e) Openings for side casing collars shall be cut into the casing top, so that the tops of all openings are on a level. Casing collars shall be fitted into place with a proper flange, or bead on the outside and drawn up on the inside, making a dust tight joint. All collars shall be of the same size as the warm air pipes to which they are to be connected.

(f) Brick set, cement or hollow tile casings shall be constructed as follows: Wall shall be not less than eight inches in thickness and shall be constructed air tight. Rectangular casing shall be, with least inside dimensions, the same as that of the portable casing of a corresponding size of furnace. Walls shall be carried to the same height as the portable walls, allowing not less than eight inches between the top of the furnace and the bottom of the top cover. After placing the collars for the warm air pipes, continue the masonry up even with the top of the collars, lay spacing rods of bar iron on edge or angle irons across the furnace top, cover these with sheet iron, cover the sheet iron with masonry and run the side walls four inches above the masonry bed. A galvanized iron casing bonnet may be used on brick set furnaces.

Provisions shall be made in the wall for a manhole to give ingress to heater.

Warm Air Pipes in Basement.

Paragraph 5. (a) All warm air pipes shall be made of bright tin not lighter than IC, or galvanized iron. Side seams shall be locked seams. All joints shall be either double seams or lapped not less than one and one-quarter inches. All pipes shall be properly secured to ceiling or joist. Any pipe fourteen inches or greater in diameter shall not be made of material lighter than IX tin or No. 28 U. S. standard gauge galvanized iron.

(b) No warm air pipe shall run within one inch of any woodwork unless it is at least four feet or more from furnace, unless such woodwork is covered with asbestos paper and the paper covered with tin or iron.

(c) All warm air pipes in the basement shall be provided with dampers not more than two feet from the casing.

(d) When warm air pipes pass through a masonry wall, a metal thimble shall be provided, having a diameter at least one inch greater than the pipe, and pipe supported in such a manner that the air space is uniform on all sides.

Wall Stacks.

Paragraph 6. (a) Single stacks. All single wall stacks or wall pipes, heads, boots, ells, tees, angles and other connections shall be made of bright tin or galvanized iron and shall be covered with not less than one thickness of 10 lbs. per 100 sq. ft. of asbestos paper. All studding and other woodwork facing said pipe shall be lined with metal and metal lath used in place of wood lath. An air space of not less than three-eighths of an inch shall be allowed on the two sides nearest the vertical studs. All such pipes shall be braced in a proper manner so as not to obstruct the flow of the air, but to retain the full capacity throughout. All joints shall be locked and held to place by means of lugs, or straps. No joint shall depend wholly upon solder to make it tight.

(b) Double stacks. All double wall stacks or wall pipes, heads, boots, ells, tees, angles and other connections shall be made of bright tin not lighter than IC or galvanized iron and shall be made double, from basement to the top of each and every stack and register head on all floors. There shall be continuous uniform air space of not less than five-sixteenths of an inch, which must be maintained between the outer and inner walls of all such pipes and fittings of all kinds, styles and descriptions; such pipes, heads, boots and other fittings to be of the styles, or equal to those accepted by the National Board of Fire Underwriters.

All pipes and fittings, either single or double, must be secured firmly in place by lugs or straps attached to the outer walls of stacks and fittings, and no nails shall be driven through these stacks or fittings at any point. No wall pipes or fittings shall be used which depend wholly on soldered joints. The various members shall be so made that all joints are locked or soldered and the several members shall be attached to each other with slip joints, which are, for the purpose intended, air tight.

Registers.

Paragraph 7. (a) When baseboard or wall registers are used, they shall be properly and permanently attached to the stack head in such a manner that will prevent any leakage of air between the head and the register.

(b) Floor registers shall be provided either with register borders or double register boxes of tin or galvanized iron with an air space of not less than five-sixteenths of an inch between inner and outer boxes.

(c) Registers of warm air and warm air pipes shall not be located in outside walls. The warm air registers in the various rooms shall be located in or near the inside walls in all cases.

Air Supply of Furnace.

Paragraph 8. (a) The air supply to furnace for warm air heating plants may be taken from outside or from within the building, or may be taken partially from outside and partially from within. In no case, however, shall air be supplied to any furnace from any basement or furnace room.

(b) The cold air intake or return where air is taken from within the building shall have a net area throughout its entire length of not less than the combined net area of all warm air pipes leading from the furnace. This may be maintained on one or more ducts.

(c) When the cold air supply is taken wholly from the outside of the building, the supply duct at its most contracted area must equal or exceed eighty per cent of the combined area of all warm air pipes leading from the furnace.

(d) Cold air ducts shall be constructed of metal, tile or other incombustible material, having smooth inner surface, and shall maintain a constant net area throughout their entire length and shall be made air-tight. Where a boot or shoe is connected to the casing at the base, the opening shall not extend higher than a line on the level of the grate of the furnace. The width of the shoe shall be of proper measurement to make the area at least equal to that of the round or square pipe to which it is connected.

(e) Wherever the space between joists is used to convey cold air overhead, the space between such joists shall be enclosed with galvanized iron. In no case shall a cold air duct be run directly over warm air furnaces unless the system is a forced draft system. The connection from this pan to the boot or shoe shall be made of galvanized iron not lighter than No. 26 U. S. standard gauge, and shall have a transition collar, the top of which area shall be at least 10 per cent greater than the area of the connection pipe.

(f) The cold air face or faces shall be made of wood or metal. Where cold air is placed in a seat or a side wall (whether furnished by owner, general contractor or furnace contractor), the open work of face must extend to within at least one inch of the floor line.

The free area of cold air faces shall be at least 10 per cent in excess of the free area of the duct or ducts to which they are connected.

No vertical cold air face shall be used whose free air opening extends more than twelve inches above the finished floor line.

Smoke Pipes.

Paragraph 9. (a) The smoke pipe shall be as short and direct as consistent with the location of the furnace or boiler. It shall be made of either black or galvanized iron not lighter than No. 24 U. S. standard gauge, and of the full size of the collar on the furnace throughout its entire length. It must have no other opening for attaching any fireplace, stove, range, water heater, gas or ventilating connection. It shall be locked, seamed or riveted; all joints shall lap not less than one and one-half inches and it shall be rigidly secured. Cast iron smoke pipe may be used.

(b) Where the smoke pipe enters the flue, a thimble shall be cemented into the flue and the connections thereto made air-tight. Should any smoke pipe come within sixteen inches of any combustible material, such combustible material must be covered with asbestos paper and a metal shield so fastened that a two-inch air space exists between this shield and the combustible material. This shield shall be no less in size than twice the diameter of the smoke pipe and of sufficient length to cover the wood at all points.

(c) No smoke pipe shall project through any external wall or window. No furnace connection is to be made to flue without proper cleanout facilities having first been provided in the flue.

Pipeless or One-Pipe Furnaces.

Paragraph 10. (a) When but one duplex grating is used for both warm air and cold air in a so-called pipeless furnace, the area of the cold air intake shall be at least equal to the area of the warm air outlet of the grating. Section 118, paragraph 4, relative to casting, shall not govern when this type of furnace is installed, but the following specifications shall be followed: The inner and outer casings of this type of furnace may be made of either black or galvanized iron not lighter than No. 26 U. S. standard gauge. A uniform air space shall be maintained at all points between the inner and outer casings. In no case shall the top of the furnace be allowed closer than twelve inches to any ceiling or joists above this furnace.

(b) Where joists are cut to accommodate this furnace, headers shall be put in and braced so as not to weaken the structure of the floor above the furnace.

(c) Section 117, paragraphs 1 to 6 inclusive, for determining area of warm air pipe, shall not govern in figuring a pipeless furnace.

(d) Where one warm air register face is used and separate face or faces for cold air supply are used, then all sections of this ordinance shall apply the same as if a pipe furnace were installed.

Paragraph 11. (a) The following provision shall be made in any building wherein the warm air heating system is to be installed for the reception of same. Joists shall be sixteen inches on center and shall be butted, not lapped. New stud partitions wherein stacks are to be run shall be made of at least 2x6-inch studding, spaced to give a clear space for the stack of not less than fourteen inches, and it shall be unlawful to run any heating stacks in any new partitions constructed thinner than 5⅝ inches net width of studs.

(b) In new construction it shall be unlawful for anyone to do any cutting of woodwork for the reception of the wall stacks or baseboard registers except the general contractor or the contractor in charge of the work for him, or some duly qualified carpenter working under him. Where it is necessary to cut joist or supporting members, headers shall be put and braced so as not to weaken the structure.

(c) Installation of new work in old houses shall in general conform to the provisions of this section. It shall not be necessary to remove the plaster and lath from the walls where the new stacks are to be run, provided said stacks are of the double type construction and properly fastened together before being installed.

(d) It is intended that where the foregoing provisions can be applied that they apply equally to all warm air furnaces, steam or hot water boilers, or any other heating system used in residences or other buildings within the City of Columbus.

Section 119.

It shall be unlawful for any person, persons, firm or corporation to construct or install any warm air heating furnaces or steam or hot water boilers or appurtenances thereto within the City of Columbus, Ohio, without first obtaining from the inspector of buildings a permit to do such work, for which said person, firm or corporation shall pay to said inspector for the use of said city a fee of fifty cents for each warm air furnace and an additional fee of twenty-five cents for each run of pipe from said furnace; provided, however, that the minimum fee for inspecting warm air furnaces shall be one dollar and the maximum fee shall be two dollars and fifty cents.

If a pipeless warm air furnace or a steam or hot water boiler is installed, there shall be charged in lieu of the run of pipe charges, a charge per room of twenty-five cents for each room heated by said pipeless furnace or steam or hot water boiler; provided, however, that the minimum charge for said pipeless furnace or steam or hot water boiler shall be one dollar and the maximum charge shall be two dollars.

Section 120.

(a) It shall be the duty of the building inspection department to inspect all warm air furnaces, steam and hot water boilers and the appurtenances thereto hereafter installed or constructed in conformity to the provisions of the Building Code relating thereto. The expenses of such inspection shall be paid out of the permits charged for permission to install or construct such warm air furnaces, steam or hot water boilers and appurtenances, and any balance remaining in the amount so paid in a year, not used for inspection purposes aforesaid, shall be turned into the general revenue fund of the city on the 31st day of December of each year.

(b) Inspection of new work shall be made as follows: When such work has proceeded to where the stacks to upper floors and heads for all side wall registers have been installed, and boots have been connected, the contractor for this work shall notify the inspection department, who shall make or cause to be made an inspection of such work. Upon finding that the work complies in all respects with the terms of this Code, there shall be affixed by said inspector or his representative to each stack or register head a certificate stating that the work complies with the ordinance relating thereto.

(c) Inspection of repaired or renewed work shall be made, in each case, as the nature of the work shall require.

(d) Final inspection of plant shall be made after the whole is connected up and ready to operate, but before any fire has been started.

(e) It shall be unlawful for any person to lath over, plaster or cover up any warm air heating work before such work has been inspected and certificates above referred to have been attached. The building department shall have the right and authority to remove or order removed all such lath, plaster or other covering which may have been placed over such work before same has been inspected. The person, firm or corporation ordering or causing such work to be covered up as herein set forth shall upon conviction be subject to the penalties set forth for violation of the terms of this chapter.

Sec. 2. That said original Sections 117, 118, 119 and 120 of Ordinance No. 31,200, passed February 10, 1919, known as the Columbus Code of 1919, be and the same are hereby repealed.

Sec. 3. That this ordinance shall take effect and be in force from and after the earliest period allowed by law.

Passed May 7, 1923.

FRED P. ZIMPFER,
President of Council.

Approved May 7, 1923.

JAMES J. THOMAS, Mayor.

Attest:

HARRY H. TURNER, City Clerk.

Zideck Ascribes Failure of Furnace to Function Properly to Insufficient and Obstructed Cold Air Supply.

Says Dimensions of Parts of Ducts Are Seriously Out of Proportion with Casings and with Each Other.

Written Especially for AMERICAN ARTISAN AND HARDWARE RECORD by E. E. Zideck, Instructor in Charge of Sheet Metal Work and Allied Trades at the Lincoln Institute, New York City.

Fourth Article.

UNDOUBTEDLY, the greater amount of prevalent furnace troubles are due to insufficient, inadequate and variously obstructed cold air supply. To it must be ascribed troubles as enumerated and described in a foregoing article, which appeared on pages 14 and 15, March 24, namely, *furnace overheating, burning out of parts, fumes and smoke in rooms, impaired draft due to leakage in the firing apparatus, fire going out, hot cellars, and poor heating results in general.*

> *"The greater amount of all furnace troubles are due to a lack of insufficient cold air supply.*
>
> *"The dimensions of the casings are out of proportion with what the furnace is delivering. The dimensions of the various parts of the ducts are ludicrously out of proportion with the casing, and to each other.*
>
> *"Aside from the absence of all proportion in dimensions of the cold air supply parts, the mistake is also made of providing large warm air pipes to a furnace which admits only a small volume of air to rise through its casing."*

A veritable anarchy is displayed in the building up of this, the most vital part, of the air heat system. The dimensions of the casing are out of proportion with what the furnace is delivering. The dimensions of the various parts of the ducts are ludicrously out of proportion to the casing and to each other.

To illustrate: A furnace recently examined was installed thus: (1) The firing apparatus was of a capacity equaling 640 cubic inches; (2) the casing allowed for 270 cubic inches of air to rise; (3) the boot at the base of the casing was 15x28 inches, with a capacity of 420 cubic inches; (4) the space between casing and ash pit, for air to enter casing, was 5x28 inches on top and twice 5x15 inches on the sides, or 290 cubic inches; (5) the cold air pipe to the boot carried 320 cubic inches; (6) the nailed-over-rafts, 2x 9x15 inches, carried 270 cubic inches; and (7) the cold air intakes took in 400 cubic inches.

Now, note the proportion!—640—270—420—290—320—270—400! Accordingly, the warm air pipes were of a combined carrying capacity of 580 cubic inches.

The firing apparatus, heating 640 inches, but allowing for only 270 inches by its casing, drew 270 inches by the cold air duct, which variously allowed for from 420 at the intakes to 270 at the nailed-over rafts. Were it not for the larger area of the warm air pipes, there would have been only 270 cubic inches of air heated and delivered. But the warm air pipes, not filled with the rising warm air, permitted the *cold air* to descend through them, and thus the volume of air at the furnace was increased and more air came up; but the system was a failure.

Aside from the absence of all proportion in the dimensions of the cold air supply parts, prevalent on 90 per cent of all installations, let us consider first the mistake of providing large warm air pipes to a furnace which admits of only a small volume of air to rise through its casing.

These furnaces were designed as *hot air* furnaces. Small casing space,

small volume of air, small diameter pipes leading to the rooms upstairs. The furnace *heated* the small amount of air and it traveled quickly. The *warmer* the air was, the *faster* it traveled and its velocity of travel through the small diameter pipes increased or fell, just as the firing was either at its height or its ebb.

The *rapid* discharge of *hot air* by that system almost equaled the benefits of the slower moving warm air coming up in greater volume. It was not the heating result which made the hot air system give way to the newer warm air kind. Rather, it was the *burning out of parts, smoke, hot cellars,* and other results of the small casing, which made it advisable to bring in more air, thereby protecting the furnace and, incidentally, producing a better system.

But, *hot air* or *warm air,* either system is *better* than the *mix-up* of a *hot air* furnace with *warm air* fittings and procedure.

The object of this article, specifically, is to point out three things: (1) The folly of putting up large cold air pipes to a furnace which admits of a small volume of air to rise through its casing; (2) the folly of providing bulky and expensive pipes, elbows, boots, etc., if the duct capacity is cut down to *less* (by the nailed-over-rafts duct, for instance); (3) the mistake of providing *larger* warm air pipes to a furnace delivering a certain smaller amount of air.

A *correct* installation calls for a casing slightly larger than is the furnace heating capacity, and for proportionate and uniform, throughout, ducts.

But if a furnace is handled which has a casing and should not be changed, then the installer but needs to *ascertain* the volume of air which that furnace will discharge through its casing, and make both cold and warm air ducts correspond to that volume.

Cold air may be brought in slightly in excess of that volume. But in no case should the warm air pipes carry more than what comes through the furnace casing. If they do, one or more of them will feed *cold air* to the furnace and there will be trouble.

(To be continued)

Heating and Ventilating Engineers Hold Enthusiastic Meeting at Drake Hotel, Chicago.

Monday, Tuesday and Wednesday, May 21, 22 and 23, one of the largest delegations of heating and ventilating engineers attended the semi-annual meeting of the American Society of Heating and Ventilating Engineers at the Drake hotel, Chicago.

The Engineers are to be congratulated upon the way in which they conduct their meetings. Papers are prepared in advance, read at the sessions and discussed orally by the members, who are, however, limited to five minutes' talk. The author of the paper after discussion had closed was given five minutes to close the discussion.

Monday morning's session was devoted to routine business, committee reports, etc. The afternoon and evening sessions were given over to the discussion on Code of heating and ventilating equipment.

Tuesday's sessions were limited to Research reports and papers, and on Wednesday, Heating and Ventilating were the subjects covered.

In order to give proper time for thorough consideration of the different papers, those pertaining to warm air heating and ventilating, which are of partciular interest to our readers, will be reproduced in early issues of AMERICAN ARTISAN.

When the engineers work, they work, but when they play, they play.

Monday evening, while the men attended the business session, the ladies were taken to the theater; in fact, so gracious was the Entertainment Committee that the ladies were given the choice of two theaters; namely, the Studebaker, where William Hodges is appearing in "For All of Us," or Cohan's Grand, where "Two Fellows and a Girl" is running.

Throughout the entire business sessions the ladies were taken care of in a manner that did credit to our Chicago hospitality. Tuesday, after a two-hour ride over Chicago Boulevards, the entire delegation dined at the South Shore Country Club, and spent the evening dancing.

The officers of the Society are as follows:

President—H. P. Gant.

First Vice-President — Homer Addams.

Second Vice-President—E. E. McNair.

Treasurer—William H. Driscoll.

Secretary—C. W. Obert.

The members of the Council are listed below:

W. H. Carrier,	A. S. Kellogg,
J. A. Cutler,	Thornton Lewis,
S. E. Dibble,	J. R. McCall,
E. S. Hallett,	Perry West.

Fox Furnace Company, Elyria, Ohio, Develops "Something New" in Warm Air Furnace Making.

Some interesting developments which are believed to be of interest to our readers are being accomplished in the plant of The Fox Furnace Company, at Elyria, Ohio.

This furnace plant was taken over in the fall of 1921 by the American Radiator Company, and a complete reorganization promptly effected.

One of the first problems encountered by W. H. Hill, the new President and General Manager, was that of quality of product, because he realized that one must look well to the value of the merchandise or product offered the buying public in the building of a permanent business.

To insure this value certain refinements in manufacture were inaugurated, and a system of rigid inspection was established in the various departments. The slogan "Quality First" was adopted, and the spirit of the new management was enthusiastically received and supported by the entire working force. Additional molding machines, with electric traveling cranes, were installed, together with other modern foundry appliances; also a new power plant for generating electricity.

The particular thing of general interest is the new cupola installation with its charging machine. Instead of having a force of laborers on the upper charging platform without supervision, the charges of iron, coke and limestone flux are made up on the ground floor level and each charge is carefully weighed by a foreman. These charges are placed in huge steel buckets which are provided with drop bottoms. As each bucket is filled with its proper charge, it is hoisted on a cable by a man riding a Shepard Electric Crane above, and when the bucket reaches the upper level the crane operator drives the crane forward, carrying the bucket into the cupola, which has been cut away to receive the bucket. When the bucket is suspended in the center of the cupola, the crane operator pulls a lever, which opens the bottom of the bucket and deposits the charge evenly in the cupola.

It is apparent that this simple device not only effects a substantial economy in labor, but also makes it possible to supervise the work of charging the cupola and to accurately determine the size of each charge.

With this arrangement it was possible to utilize a formula which had been worked out by the metallurgists at the laboratory of the Institute of Thermal Research, Buffalo, New York, by which a metal is produced at the big Elyria, Ohio, plant which is known as "Sunbeametal," which has a tensile strength of approximately 28,000 pounds per square inch. In ordinary cast iron the tensile strength is about 14,000 pounds per square inch, and because of the weakness of the iron there is a large breakage of furnace castings made of such iron, and the life of the furnace is limited because of the inability of such weak iron to withstand the severe strains of constant expansion and contraction. Test bars are taken from each heat and the tensile strength of "Sunbeametal" is determined, as well as a chemical analysis.

This "Story of Sunbeametal," as well as the many other factors, including plant, product, merchandising plans, national advertising and local dealer helps, are interestingly told in what the Company calls their proposition book, "Sell Warm Air Heating—Not Castings by the Pound." It is sent on request to established dealers.

Dr. Evans Discusses Heating and Ventilating Systems for Hospitals.

In a recent issue of the *Chicago Daily Tribune,* Dr. W. A. Evans, former Health Commissioner of Chicago, discusses three methods of providing heat and fresh air for hospitals, and his remarks are reproduced in the following.

It appears, however, that while in the first "method" there is no provision for "change of air," and while in the second "method" a makeshift humidifying device is suggested which cannot possibly produce enough humidity, the third "method," which is that of direct warm air heating, actually produces the ideal air conditions, so that it is the only proper method of heating and ventilating for hospitals—as it is for residences.

Dr. Evans' article follows:

Hospital Ventilation.

Miss Helen R. Inness contributes an interesting article on the ventilation of hospitals through the "Modern Hospital." Her statement is especially illuminating in that she relates the matter of cost to heating and ventilating in an unusual way. She uses as a unit a hospital ward 20 feet wide and 90 feet long and with a ceiling 12 feet high. This room would contain 21,600 cubic feet of air space and 1,800 square feet of floor space. This room, used as a basis of calculation, has 765 square feet of wall, of which 315 square feet are occupied by window glass.

In this ward there are eighteen beds containing eighteen adult persons. Each person has 100 square feet of floor space and 1,200 cubic feet of air space. The data for heating and ventilation relates to average winter conditions of temperature, wind and snow and rain in the vicinity of Chicago.

The first method of heating and ventilation consists in providing enough radiation located in the room to provide for heat loss through walls and glass and to allow for a normal change of air once per hour by leakage and by window ventilation. One hundred square feet of radiation would heat up the incoming air. Two hundred feet would offset the heat lost through walls and radiation, or a total of 300 feet. To keep a dry bulb temperature of 68 degrees Fahrenheit under these circumstances would require one ton of coal a bed, or eighteen tons for the ward.

The second method calls for enough radiation to offset the losses of heat through the walls and windows, and also enough to supply 4,800 cubic feet of warmed air per person per hour by fans. The total cost of this system of heating and ventilation would be two tons per bed perseason, or thirty-six tons for the ward.

The third method dispenses with all direct radiation. The room is heated and ventilated by warm air. This requires fans, air ducts, washers and the generally known equipment. The cost of the third method would be three tons of coal per season per bed, or fifty-four tons for the ward. This cost would be reduced if any considerable proportion of the air was recirculated, but the safety of recirculating air in a hospital has not been established.

On the other hand, an editorial in *"Modern Hospital"* says that the basis on which costs should be figured is not the square feet of floor space per bed, or the cubic feet of air space, but these plus the per bed allowance of space in corridors, closets and other necessary accessory space. This raises the cubic feet of air to be moved from 1,200 to over 7,000. This raises the per bed cost of the third method more than it does the cost of other methods.

As one means of ventilating and heating by the second method, she suggests a small motor-driven fan set at an intake window in the ward.

Louisville Hardware Store Advertises Well-Known Warm Air Furnace on Easy Payments.

Twenty-five Per Cent for Initial Payment and Five Per Cent, Approximately, for Each of 15 Months.

ALTHOUGH we do not advise anyone to go into selling warm air furnaces on the easy payment plan, there may be occasions where in order to keep business from getting away it may be necessary for an installer to make a few sales on that basis, and for this reason we publish in this page an advertisement run by the Bomar-Summers Hardware Company, in the *Times*, Louisville, Kentucky. We have deleted the name of the furnace, because possibly the manufacturer may not wish it generally known that his furnaces are being sold in that manner. In most cases in "easy payment" furnace sales, the necessary financing is usually done by the manufacturer.

It is to be noted that the first payment is about twenty-five percent of the total price, and that the monthly payments average about five percent, so that in the majority of sales the furnace will be paid for in fifteen months' time.

Aside from the feature of the "easy payment" plan, this particular advertisement certainly was planned to stand out on the page of which it was a part, and there is little question that the writer of the advertisement succeeded in his intention. It is well balanced. While there is a good deal of text matter, it is easily read and there is just enough white space to avoid the charge of overcrowding.

Eight of the most important features of the furnace are strongly emphasized.

Incidentally, it is interesting to note that instead of quoting grate or firepot sizes the furnace dimension is indicated as for example, "4 to 6 Room Size."

This method of indicating the size is, to our mind, much preferable to quoting firepot or grate diameters, because here is an actual statement which gives advice as to the size that should be used.

Enjoy the Comfort and Fuel Economy of the
Name Deleted
FURNACE
While Paying for It Through Our
Easy Club Pay Plan
Here is the cost and easy payment way of replacing your old, worn-out furnace with a Slotted Firepot, Oversize installed complete:
4 to 6-Room Size, $; Terms, $ Cash; $ a Month
5 to 7-Room Size, $; Terms, $ Cash, $ a Month
6 to 8-Room Size, $; Terms, $ Cash, $ a Month
8 to 10-Room Size, $; Terms, $ Cash, $ a Month
Why the Is the Real Economy Furnace
In Both Fuel Consumption and Cost of Upkeep
TIGHT CASING JOINTS—Impossible for dust, dirt, and soot to escape through the register into the rooms.
LARGE FEED DOOR, conveniently located, and, like all doors, ground to fit absolutely tight.
THE FIREPOT—A two-section, full-slotted firepot (see illustrations) is an exclusive feature of the Furnace. Expensive, yes, but it is the most durable and the most efficient firepot ever used in a furnace. One reason for fuel economy.
SCIENTIFIC HUMIFIER — Comfort with temperature registering five degrees less than ordinarily required — another big fuel-saving feature.
EXTRA LARGE CAST-IRON RADIATOR—The low fire keeps the heating surface at a high temperature. Still another reason why the will make your coal pile last longer.
THE COMBUSTION CHAMBER—Very heavy and designed for the hardest kind of service. And made extra large to permit more complete burning of super-heated air and gases.
THE ASH PIT is a one-piece casting that makes a firm foundation for the furnace.
SPECIAL GRATES are in two styles: double-geared triplex bar or drop front flat shaking grate.
PAY A LITTLE MORE AT FIRST TO SAVE A WHOLE LOT LATER.
PHONE CITY 8500
BOMAR-SUMMERS HARDWARE COMPANY
PHONE MAIN 93
315-317 WEST JEFFERSON STREET

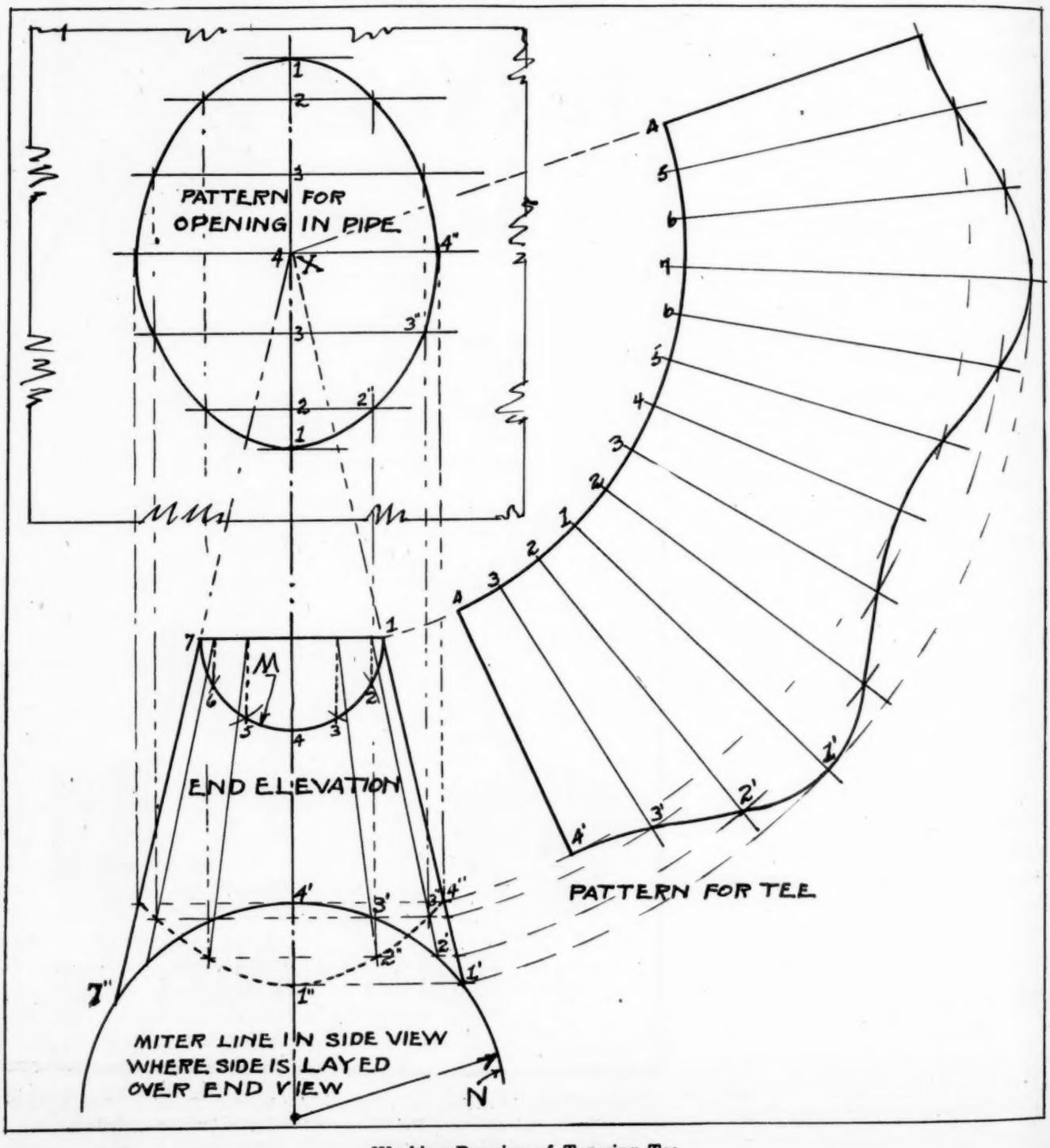
Three Column Advertisement of Warm Air Furnace Showing Plan for Easy Payment Purchase. Published by the Bomar-Summers Hardware Company, Louisville, Kentucky.

How to Make a Pattern for the Tapering Tee on a Cylinder Where Tee Is To Connect with Main Pipe.

Development of Side Elevation Explained for Use Where It Is Desired to Lay Out Pattern for Opening in Main Pipe.

Written Especially for AMERICAN ARTISAN AND HARDWARE RECORD by O. W. Kothe, Principal, St. Louis Technical Institute, St. Louis, Missouri.

WHERE a tee is to connect with a main pipe, then, first draw a center vertical line and at a convenient place describe the arc for the main pipe N. In the proper place as altitude, describe the half-section for branch pipe M and square out the line as 1-7. Divide this half-section in equal parts and



Working Drawing of Tapering Tee.

from each point square lines to the base 1-7 as shown. Then at some convenient place on the center line, as X, draw the side lines of elevation through the points 1 and 7. Also from each point in the base line 1-7 draw radial lines from the apex X until these lines intersect the large arc M as in points 1′-2′-3′-4′, etc. Observe these lines radiate from the apex X and are not drawn parallel to the side line of tee.

The pattern for the tee can be set out from this end elevation by using X as center and X-1 as radius. Describe an arc indefinitely. On this arc set off the circumference or twice as many spaces as found in the half-section M. Then, using X as center, draw radial lines through each of these points through pattern as shown. Now, extend lines from 4′-3′-2′ to the side line 1-1′ and then from here sweep them into pattern, using X as center. This establishes points 4′-3′-2′, etc., in the pattern and enables tracing that curved line, where the tee and the cylinder fit together.

Should it be the desire to lay out the pattern for opening in the main pipe, we must develop a side elevation. This we can do by laying the side view over the end view, since the radial lines in the body of both end elevation and side elevation will remain in the same relation to each other. So from points 4′-3′-2′-1′ we draw horizontal lines, and consider mentally that we make a quarter turn of our elevation, which bring 1′ as 1″; 2′ as 2″; 3′ as 3″, and 4′ as 4″. Sketch a line through these points shown, dotted in this case, and you have the side view of miter line as it would appear in side elevation.

Observe where the lines of the end elevation intersect the main pipe N in points 1′-2′-3′-4′; pick these spaces separately and set them off on a center line as 1-1 above elevation. Then from points in this line draw stretchout lines and from each point as 1″-2″-3″-4″ in elevation erect lines to intersect stretchout lines of similar number. Through these intersections stretch a uniform curve and you have the outline for the pattern of the opening. The exact manner of assembling, whether riveting or seaming, will govern how to allow laps.

American Zinc Institute Holds Convention at St. Louis, Missouri.

The Board of Directors of the American Zinc Institute at their recent convention in St. Louis, Missouri, decided to spend $100,000 on a publicity and advertising campaign, setting forth the merits of zinc in all its branches.

Stephen S. Tuthill, Secretary of the Institute, said: "The zinc industries believe that they cannot expect the consuming public to take an interest in their products unless they themselves demonstrate their belief in them."

The plan of financing the organization already in use will be followed in the coming year.

This plan calls for a payment, according to production, of 5.00 cents a ton on slab zinc, 2.50 cents a ton on zinc concentrates containing 50 per cent of zinc and over, and 1.50 cents on zinc concentrate containing under 50 per cent zinc.

Contributions which were made by various members amounted to about $100,000.

The Institute will publish in a short time a "Zinc Worker's Handbook" which has been in the course of preparation for the last three years. The information contained in this book will be of much use to the sheet metal worker.

How Filter for Cistern Water Can Be Made.

On page 22 of our May 19 issue J. A. Brandt, Mooseheart, Illinois, asked how he could make a filter for water going into cisterns.

O. W. Kothe, Principal, St. Louis Technical Institute, makes the following reply to this question:

To AMERICAN ARTISAN:

"Responding to the inquiry of J. A. Brandt, Mooseheart, Illinois, for designs of a water filter for cisterns, with a two-inch pipe carrying the water, the writer does not remember of ever seeing anything like that, although other tradesmen may have experimented on it and would give their opinions.

"As near as we could come to a filter would be a strainer placed into a funnel shaped with an oval top so the strainer could readily be lifted out and cleaned. A 2-inch pipe does not allow for much obstruction and it will stop up. A person could also make a sort of oblong-shaped box similar to a fishing bucket, and that would filter the water and keep leaves and straw out of the cistern.

"The only filter the writer ever met with was a brick arch or structure built in the center of the cistern, and the water filters through the bricks; the space in the filter being large enough to well supply the household. This type I suppose my old friend, Mr. Brandt, is also acquainted with."

Lichty Metal Products Company Are Now in New Home.

The Lichty Metal Products Company, Waterloo, Iowa, of which N. A. Lichty, President of the Iowa Sheet Metal Contractors' Association, is President and General Manager, have moved to a new location, having purchased a permanent home at Second and Sycamore Streets, Waterloo. They moved in on April 1 and are now all settled in fine shape. They have a building 60 feet by 150 feet, two stories high, with 18,000 square feet of floor space and 150 feet of side track for unloading and loading cars. They have installed some new machinery and equipment for the purpose of taking care of the increasing demand for Monitor skylights and ventilators which they manufacture.

If any sheet metal contractor wants to see a first-class sheet metal factory, call on Art, and if you want to know how to plan that shop you are going to build in the future, call on John. One thing more, you will always be made welcome.

O. W. Kothe Tells Peter Liver, Winona, Minnesota, How He Can Solve Pipe Problem.

Submits Working Drawing for a Rectangular Pipe Which Is to Fit Onto a Cone.

THE following inquiry made by Peter Liver, Winona, Minnesota, appeared on page 26 of the issue of May 19:

To AMERICAN ARTISAN:

I have mailed you the drawing of a rectangular pipe which is to fit onto a cone. I should be pleased to have you solve this problem for me.

PETER LIVER.

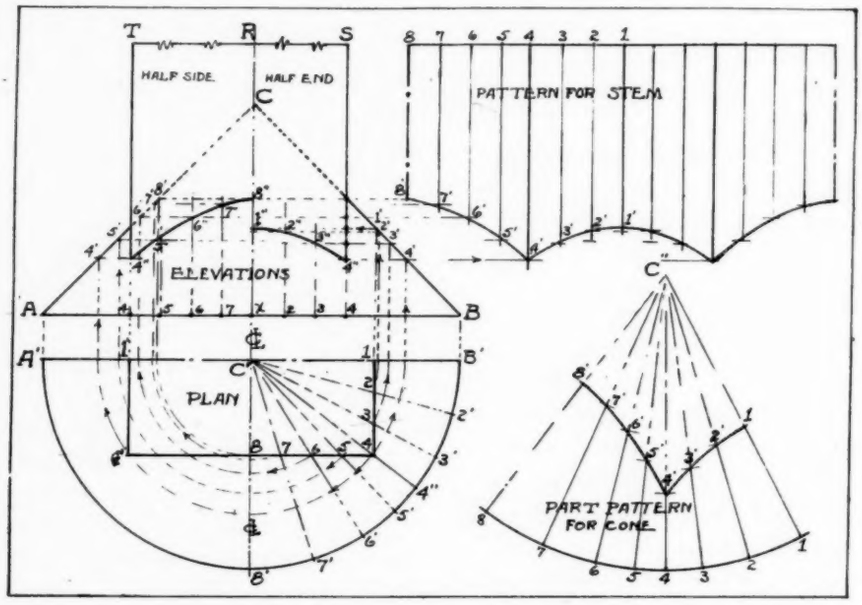
Winona, Minnesota, May 9, 1923.

O. W. Kothe, Principal, St. Louis Technical Institute, St. Louis, Missouri, responded with a working drawing and full explanation.

"First, draw the elevation of the cone, and then sweep the plan and place the half rectangle pipe in position, all made according to measurements. In this case treat one quarter as ¼ and 4/8 of the plan in a convenient number of equal spaces, and then use C′ as the center and each of these points as 2-3-4-5-6-7-8 as radius, sweeping arcs as shown. In this case we sweep points 1 to 4 to center line C′-B′, and points 4 to 8 to center line C′-A′.

"Now since ¼ represents the half end of rectangle, we pick these points and set them as x-2-3-4 on base line of elevation. This is to give width to the pipe of elevation, and from each of these points we erect lines some distance into cone. In the same way pick the spaces 4 to 8 and set them as x-7-6-5-4 on base line of elevation, which gives width to the side of rectangle.

"Observe that lines C-A and C-B of elevation are identical lines to C′-A′ and C′-B′ of plan, only these in plan are foreshortened. So by



Plan for Rectangular Pipe on Cone.

erecting lines from each point where the plan arcs intersect center line of plan C′-B′ and C′-A′, we carry these points into elevation as 1′-2′-3′-4′, and 4′-5′-6′-7′-8′. These points then become true positions on the slant side line, and our next step is to move them over horizontally to intersect those lines erected from base of elevation, as in points 1″-2″-3″-4″, and 4″-5″-6″-7″-8″, which permits drawing the miter lines for the side and end views as shown.

"Observe that the points 1′-2′-3′-4′, and 4′-5′-6′-7′-8′ on the slant lines of elevation give the true altitudinal heights, and, therefore, all we want is to pick these altitudinal heights and set or project them into the pattern for the stem. This then, in practice, does not require the development of the miter lines 1″-4″, and 4″-8″ of elevation. All that we need is to sweep the arcs from the plan to C′-B′, and here erect them to elevation slant line C-B. After this, all we need to do is to bring them back horizontally to a vertical line as S-4″, as the several dotted points indicate. This, of course, requires that you watch each point carefully and number them so there will be no confusion, or a serious error would result.

"But this shortens the operation and allows laying out large work with greater accuracy. By cutting a paper strip, or a metal strip, and laying it alongside of line S-4″, we 'lift' or mark off the points from it, and then slide the strip along the lines in pattern, and mark the points in miter line of pattern. This saves projection, and also transferring with dividers and tramel points, and is also quicker and often more accurate if care is taken.

"In laying out the cone miter lines, we see from plan that we have no way in which to locate our points in the body of cone. So we draw radial lines from C″ through each of our points as 2-3-4-5-6-7-8 until they intersect the outer semi-circle of the plan, as in points 2′-3′-4′-5′-6′-7′-8′. This then permits us to pick each of these divisions separately, and to transfer them on the base line of pattern for cone. By drawing lines radially to the apex C″, we then reproduce the lines of plan in a straightened out position. Next, by picking the true slant heights as C-1′, C-2′, C-3′, C-4′, also C-4′, C-5′, C-6′, C-7′, C-8′, and using C″ in pattern as center, we mark points as 1′-2′-3′-4′, etc., on lines of similar number as taken from the elevation. This then permits sketching the miter cut or lines of penetration between the cone and rectangle stack. Edges for joining must be allowed extra."

Woman best enjoys an outing when she knows she ought to be home cleaning house.

Everybody Willingly Shares Your Profits, Says Greenberg at Melon-Cutting Party.

Have a Care, However, Lest Old Age Find You "Broke" and Alone.

Written Especially for AMERICAN ARTISAN AND HARDWARE RECORD by J. C. Greenberg, Cleveland, Ohio.

E. Z. MARK was just about to close up for the day when I asked him to wait a minute. He did. As I approached his "flivver" in front of his place I noticed a large, healthy-looking watermelon which he was taking home.

"Some melon, I say!" I remarked.

"Yep. Some melon," E. Z. replied. "Better hop in and come on home with the melon and me, and we will let you 'in on it'."

I protested that I had not yet had supper, and that I wanted to go to the hotel and wash up a little, but E. Z. would not hear of it.

"You are a lying fool," he said, jokingly. "You like watermelon better than anyone I know, and you know damn well that you want some. So cut out that 'bull' and come home with me. We can stake you to a meal, and we also have plenty of soap and water so that you can wash up. Come on now!"

What could I do? I like watermelon about as well as anybody does, so I accepted E. Z.'s invitation and we rode home. No sooner had we entered when Mrs. Mark smiled and said: "Hurry up, boys! I have a fine watermelon for you." Talk about luck, hey?

E. Z. only laughed. He called Jim Heins and Fred Gallagher over the phone and asked them over to help "cut the melon." I was glad also, because they are good scouts and association men at that.

Well, to make a long story short, we had supper, and waited for the other two fellows to come. They came, Johnny on the spot, and we took the kitchen table out under the tree in the yard and we went to it. Doggone it, it was a fine watermelon. Nice and juicy and lusscious. There was Mrs. Mark all smiles with a big slice in her hands. Boy! it was a sight for sore eyes.

After the melon was gone, we smoked and talked. It pleased me to see everyone so happy. I sat quiet and just listened. E. Z. noticed it and demanded to know why I was so quiet.

I really was thinking how strange it is that a watermelon can inspire a fellow along the line of business. Finally I said: "Boys, this watermelon represents business life to a T. It showed me a complete business life with a moral."

"Let's hear it," they all spoke at once.

"Well, here goes," I said. "You, E. Z., invited us to help you eat your melon, and none of us refused. We were glad to help you eat it. It is good to eat melons like that. Yet, I could not help but think how many business men cut melons and invite the public to help eat them. I refer here to that cheap bid proposition. Every time a man bids on a job of any kind without figuring a decent profit he actually invites the public to help him eat a watermelon, but in business the melon is the profit. Each customer gets some of the profit that the business man should have got; they all help eat the melon all right, but they refuse to pay a price that will allow another melon for the future. Whenever you give your profits away, you are cutting a melon for the public. The public eats it and does not even say thank you for the invitation.

"That's pretty near the truth all right," Gallagher remarked.

"You bet it is," I asserted. "The worst of it is that the melon cutter who gives his profits away will some day go 'dead broke' or he will get to be an old man, or both. When the dark days come and the 'dead broke' man looks around him, seeing the many customers that have helped to eat his melons, he is sorry, but it is then too late."

"Right you are," Heins agreed, "and I know of one man in this town who is looking around right now, that man being Mr. Porter. That poor fellow is on his last lap and is as broke as he can be."

"Sure he is," I said, "and if he should tell all of the customers he ever had that he is broke, appealing to them for assistance, they would laugh at him and call him a 'nut.' Boys, you can give all the profits away as long as you want to, but those people who shared in this giving and taking wouldn't give a dollar bill to save you from the poor house. Yes, boys, everybody likes to share the other fellow's melon, but when it comes down to brass tacks, you will be cast aside along with the juicy slices of profit that you gave away."

"That's no lie," said Gallagher.

"No, it is no lie," I asserted. "I have seen them come and go by the hundreds. If they could retrieve all the profits they gave away through ignorance, they could buy a city block for the money. Instead, they went broke and cursed their luck. Boys, when you're broke no one will help you. Better look around and help yourself while you are young and healthy and feeling fit. Save a little and raise your own watermelon patch in the bank. That's where you can cut a melon and get interest on it."

"Now you stop that 'crepe hanging'," Mrs. Mark said with a smile. "You have us all frightened to death. I guess we are not giving any profits away, are we Honey?" She was looking at her husband.

"No, I guess not, Emma," E. Z. replied without looking up.

Heins looked at Gallagher and winked. E. Z. looked at me and winked, but there was guilt in every wink, believe me there was! Mrs. Mark disappeared for a moment, but soon came back with something in a cigar box. What do you suppose it was? Yes, you've guessed it. It was the box of chips and a deck of cards. Thus the watermelon cut-

ting party ended, and the chips began to change hands most beautifully.

Moral.

Anybody will help you cut a price, but few will ever help you when you are broke. Figure profits and save your money.

St. Louis Sheet Metal Men Elect Delegates to National Convention.

Julius Gerock, Jr., President of the Gerock Brothers Manufacturing Company, St. Louis, Missouri, and a member of the Publicity Committee of the Sheet Metal Contractors' Association, announces the selection of delegates by the Association who are to represent the Association and the Sheet Metal Consumers' Protective Association at the National convention in St. Louis, June 25 to 29.

The announcement reads as follows:

At the May meeting of the Sheet Metal Contractors' Association and the Sheet Metal Consumers' Protective Association the following named men were elected as delegates for the National convention to be held in St. Louis, June 25 to 29, 1923:

For the Sheet Metal Contractors' Association.

DELEGATES	ALTERNATES
Erwin C. Grenzebach	Henry Stark
Richard Richardson	A. P. Faessler
William Schwartz	Walter Krueger

For the Sheet Metal Consumers' Protective Association.

DELEGATES	ALTERNATES
J. D. Corbett	Harry Gevecker
Luke Tiernan, Jr.	Walter Wimmer
William Koelsch	H. W. Symonds

Both meetings were well attended and the election of delegates to the convention was quite spirited.

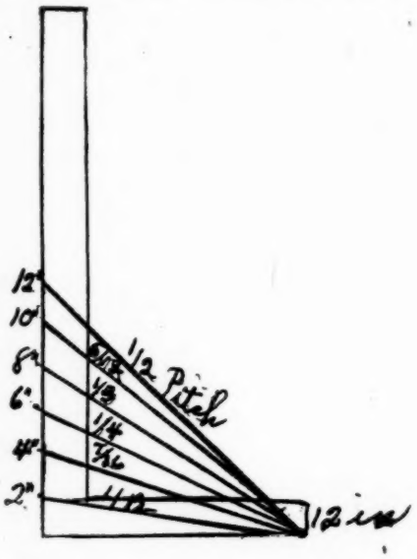
JULIUS GEROCK, JR.,
Publicity Committee.

Bay City, Michigan Firm Appointed Distributors of Arc Welding Electrodes.

The Gibb Instrument Company, Bay City, Michigan, manufacturers of electric welding equipment, have been appointed Middle West distributors of the Arc Welding Electrodes made by the General Electric Company.

Bonbrake Gives Simple Rule for Determining Pitch of Roof.

Apparently one of the hardest things for a young tinner to remember during the apprentice stage of his career as an artisan is the given number of inches to the foot necessary to make a certain roof pitch. At least this was true in my case. Accordingly the "boss" gave me the



following simple rule, which has "stuck" with me ever since and which, hoping that it will prove equally convenient to others, I am passing along:

"Divide twenty-four inches by the fraction of the pitch desired; that is, if a one-half pitch is desired, divide twenty-four inches by two and the quotient will, of course, be twelve. If a pitch of one-third is wanted, divide twenty-four inches by three and the quotient will be eight.

The accompanying illustration shows how the above rule although exceedingly simple as it is, can be verified on an ordinary steel square.

Class for Sheet Metal Training to Be Established by Craft in Columbus, Ohio.

The sheet metal contractors in Columbus, Ohio, are planning for the establishment of a sheet metal class in connection with the Vocational Training Department of the Public Schools, and W. E. Lamneck, of the W. E. Lamneck Company, has written the following letter to the heads of the Vocational Training Departments in various Ohio cities, in which he asks for information on a number of points:

"I am assuming that in connection with your Vocational Training Department you are instructing a sheet metal class.

"Up to this writing, we have never had a sheet metal department in the Columbus public schools.

"Recently, the Sheet Metal Contractors of Columbus have purchased and given a sheet metal equipment to the Board of Education to be used in the Vocational Training Department for instructing the boys in the sheet metal trade.

"So far, we have been unable to secure the services of anyone who is capable of instructing a class and thought probably there might be a person available in your city.

"Do you have both a night and day class? What do you pay the instructor? Does the Board of Education pay all of the instructor's salary? Does the Board of Education furnish the sheet metal used?

"If you will kindly give us the information as requested above, it will be of great assistance to us in negotiating with the Board of Education in order to get a sheet metal class established in the public schools of our city.

"Thanking you in advance for any information you are at liberty to give us, I am

"Very truly yours,
"W. E. LAMNECK."

We trust that any one who reads this letter and is in position to furnish any part or all the information desired will communicate with Mr. Lamneck.

Compensation Insurance Rates Are Reduced.

Three changes in premium rates for compensation insurance which interest hardware merchants have recently been announced by all companies. They are:

Hardware store salesmen, etc., 87 cents per hundred dollars of payroll, with minimum premium of

$14.00, effective March 31, 1923—a reduction from 95 cents per hundred of payroll with minimum premium of $15.00.

Plumbing rate has been reduced, effective March 31, 1923, to $2.49 per hundred of payroll with minimum premium $22.00. This class formerly took rate of $2.77 per hundred, with minimum premium $24.00.

The most important change, however, is in "Sheet Metal Work" (effective November 20, 1922), and here a substantial reduction is possible if dealers who conduct tin shops get into proper classification. Following is the text of paragraph in the Compensation Rate Book relating to this subject:

"'*Sheet Metal Work*'—shop and outside (not otherwise classified), Galvanized Iron, Sheet Iron, Corrugated Iron, Tin or Copper—Erection, Installation and Repair. Code Number 5538. This classification is intended to cover incidental sheet metal roofing if performed by a contractor principally engaged in sheet metal work. It is not, however, available for division of pay roll to a contractor principally engaged in roofing work; all the work of such contractor, irrespective of the character of the material used for roofing, shall be classified and rated as Number 5551—'Roofing—all Kinds.'"

(Rate for roofing is $10.42 hundred; minimum premium $62.00.)

(Sheet Metal Work is $3.21 hundred; minimum premium $26.00.)

Please observe that a sheet metal worker performing the varied kinds of operations which go with the shops generally connected with a hardware store, may now cover his incidental roofing jobs at same rate as his inside work. Heretofore the fact that roofing was done by the dealer even in a small way required that he pay the minimum premium charged for that classification, viz., $62.00.

Now, by insisting that he be given the "sheet metal work" classification in his policy, he may be covered for all his metal working operations at the rate stated above for that class. The saving would be at least $36.00 per year in a small shop and more if the payroll rate produces a larger premium than the minimum.

This reduced rate cannot, of course, be claimed by shop owners who specialize in roofing, making that class of operation their chief business. Proper regard must be given to interpretation of the words "incidental roofing" — otherwise there would likely be a clash between the policy holder and the insurance company at time of final settlement on policy.

There are, however, many hardware merchants and sheet metal contractors justly entitled to the lower rates and they should make note of these changes and consult their insurance carriers at once to see that the new rates are made effective for them from the several dates mentioned in this article.

EDITOR'S NOTE.—We are indebted to Secretary John B. Foley of the New York State Retail Hardware Association for the information contained in the foregoing.

Notes and Queries

"Invincible" Lawn Mower.

From James A. Black Hardware Company, 3200 East 92nd Street, South Chicago, Illinois.

Will you kindly inform us who makes the Invincible lawn mower?

Ans.—Chadburn and Coldwell Manufacturing Company, Newburgh, New York.

Sheet Metal Course in Illinois School.

From William E. Forster, 206 North Parkhill Street, West Frankfort, Illinois.

Can you tell me where I can take a sheet metal course (not correspondence), preferably in Illinois or Michigan?

Ans.—Bradley Polytechnic Institute, Peoria, Illinois.

Automatic Humidifiers for Furnaces.

From E. A. Schmidt, Wisconsin Rapids, Wisconsin.

Who makes an automatic humidifier for warm air furnaces?

Ans.—Geo. W. Diener Manufacturing Company, 400 Monticello Avenue, Chicago, Illinois; Haynes-Langenberg Manufacturing Company, 4057 Forest Park Boulevard, St. Louis, Missouri, and W. J. Haynes, 328 West 6th Street, Kansas City, Missouri.

Small Washing Machine.

From Louis I. Drackert, Tipton, Missouri.

Please advise me who makes a small portable electrical washing machine of about six sheets' capacity.

Ans.—Home Devices Corporation, Brooklyn, New York; Universal Utilities Corporation, Alpena, Michigan, and Gillespie-Eden Corporation, 158 North Wabash Avenue, Chicago, Illinois.

Repairs for "Mohawk" Lawn Mower.

From Baird-Swannell, Incorporated, 286-298 East Court Street, Kankakee, Illinois.

Kindly inform us where we can secure repairs for the "Mohawk" lawn mower.

Ans.—Whitaker Manufacturing Company, 409 South Green Street, Chicago, Illinois.

Scrap Metals.

From Fitzgerald Hardware, Madison, South Dakota.

Will you please advise me who buys old copper and brass.

Ans.—S. Birkenstein and Sons, 1054 West North Avenue; Argo Iron and Metal Company, 1640 Elston Avenue, and Western Metal Company, 657 West Ohio Street; all of Chicago, Illinois.

Repairs for "Faultless" Furnace.

From Barron Plumbing and Heating Company, Barron, Wisconsin.

Where can we get a set of grates for a Faultless warm air furnace?

Ans.—Northwestern Stove Repair Company, 20 West Lake Street, Chicago, Illinois.

Roofing Slates.

From City Tin Shop, 106 West Main Street, Warsaw, Indiana.

Please inform us who makes roofing slates.

Ans.—Asbestos, Shingle, Slate and Sheathing Company, 319 North Wells Street, Chicago, Illinois; American Sea Green Slate Company, Granville, New York, and Knickerbocker Slate Corporation, 153 East 38th Street, New York City.

Unusual Garden Tool and Seed Window Display Calls Forth Yearnings of Inner Man for Great Outdoors.

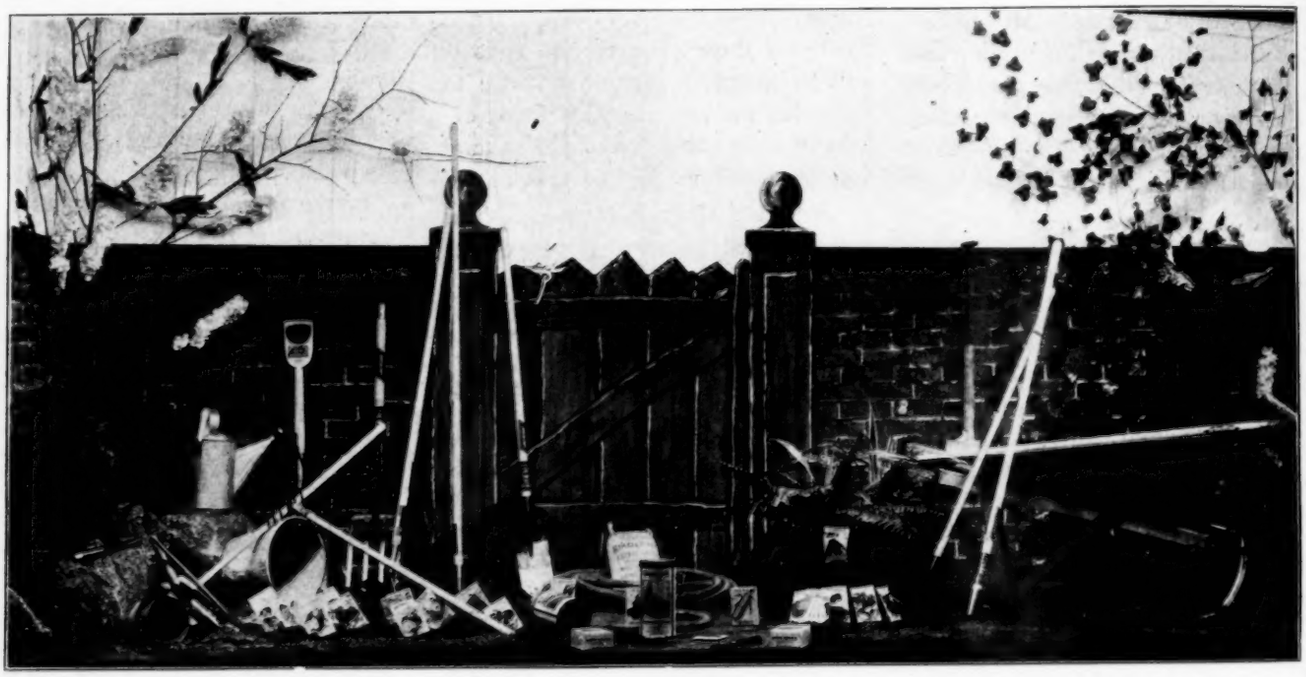
Lilly Hardware Company, Indianapolis, Indiana, Makes Strong Appeal for Hand Tool Business.

"WHAT is so rare as a day in June? Then, if ever, come perfect days." The birds are returning from the southland to greet us with their joyous tones; the softly falling spring rains cleanse the air, and the rapidly opening buds and leaves on the trees foretell the approach of spring. Is it any wonder that our thoughts turn to the garden and living things?

The accompanying illustration is that of a spring window display arranged by the Lilly Hardware Company, 114-118 East Washington Street, Indianapolis, Indiana.

The picture is self-explanatory, but the following description by the firm is exceedingly instructive and shows originality and resourcefulness on the part of the members:

"This window is what one would



Originality and Resourcefulness of Lilly Hardware Company, Indianapolis, Indiana, Shown in Making Spring Garden Tool Window Display.

How our hearts throb as the smell of the newly plowed earth strikes our nostrils! We can vividly picture in our mind's eye the small, green shoots pushing themselves through the soil prepared with those new tools recently purchased; we can almost taste those delicious radishes and that wonderful salad-prepared from the lettuce which we so tenderly nurtured through the spring, and carefully transplanted; also the asparagus cooked in those new enameled ware kettles and the rhubabrb pie baked in those new pie tins.

call an oddity, especially for a hardware store. The background is made of Upson board painted to resemble an old brick fence with the old-fashioned wooden gate and posts. The whole scene is typical of an old-fashioned back yard and garden. The old brick wall runs from the center of the window front to the gate, but the photograph fails to show this.

"The small hedge is made of cedar trees and the rocks are of the huge sponge type found in all greenhouses.

"Along the front of the window you will note a green moss which resembles grass, and this is watered every morning to keep it green.

"The trees in the rear at each corner are covered with green leaves and wisteria. Ivy is the climbing vine at one end of the picture. The implements and seed which you see scattered around in the picture are indicative of spring, showing spades, forks, shovels, rakes, wheelbarrows, buckets, flower pots, sprinkling cans, shears, pruning knives, grass seed, grass fertilizer, sprays, flower seeds, and vegetables.

"As you will see the whole idea is one of spring, and conveys the idea that here you can secure everything to transplant your plants, seed your garden and tools for every purpose."

If you do not like the business you are in, and if you are sure you are not fitted for it, make a change as soon as you can, but don't mistake a notion for a fact.

Brides and Brides-to-Be Can Easily Be Developed Into Steady Customer of Store.

Enameled Ware and Other Housekeeping Utensils, Offered in Attractive Manner, Will Get Her into Habit of Patronizing Merchant Who Caters to Her Wants Now.

HERE comes the bride!

She's your best customer—too bad there aren't more of her. She's your chance to sell almost everything in your store—and a dozen enameled ware utensils at one time instead of a single saucepan.

The new housewife is always an excellent prospect, not only for enameled ware, but for all the other household goods you carry in stock. What effort do you make to capture her patronage? Do you realize how important it is for her to get into the habit of coming to your store? Every new customer is valuable, but the woman who has just married is worth a great deal more to you as a customer than the woman who has just celebrated her silver wedding anniversary—for the former is likely to remain a customer much longer. Furthermore, it is easier for a young person to form habits. If she gets into the habit of coming to your store it is not likely that you will lose her trade as long as you give her good service.

Enameled ware provides a good way of starting this habit. All girls know enameled ware, its good qualities, the long wear it gives, the ease with which it is cleaned, its sanitary qualities, the manner in which it completely resists the action of food acids.

Every bride, furthermore, is interested in her kitchen. Don't let anyone tell you otherwise. Despite all that has been said and written about the flapper, the girl of today is a vigorously sensible creature who knows that the way to a man's heart is through his stomach. She is interested, also, in having her kitchen look attractive, and this is another good point on which enamaled ware can be sold to her.

There are three particularly good ways of bringing a store to the attention. These are: (1) Newspaper advertising (2) Direct-by-mail advertising; (3) Window displays.

The newspaper advertising should be directed primarily to the young housewife, but it will interest other women as well and result in additional sales. It should contain such phrases as "the happy kitchen makes the happy home—everything in enameled ware for the newly-wed's kitchen" or "the wise bride chooses enameled ware—the clean ware."

> *A bride is a much more valuable customer to make than an older person, first, because she will be in the market for a larger amount of household articles; secondly, she wishes to equip her kitchen with the best utensils; third, she has not formed the habit of buying in any particular store and can, therefore, be made a permanent customer. This article contains a number of the more prominent ways of getting the bride's business.*

In these ads addressed to the newly married woman or to the girl about to be married a complete outfit of enameled ware should be featured, perhaps at a special price. It is suggested that this outfit include tea kettle, coffee pot, dish pan, rice boiler, two saucepans (3 and 6 quart sizes), pudding pan, mixing bowl, spoon, pail, Windsor dipper, colander, soap dish and sink strainer. Of course, other combinations of enameled ware articles may be made up.

Another effective way to advertise is to have letters prepared for use when marriages take place. It is easy to keep track of these events through the daily papers. The letters should be addressed to the bride and should congratulate her upon the event and then voice the dealer's desire to be of service to her and request her to visit his store. Special attention should be directed to the enameled ware, since the bride will be collecting her kitchen outfit, and, in order that the letter make a definite point and carry at least one concrete idea to its recipient, the price of an outfit of enameled ware should be quoted. This should be instanced as an example of the values the store has to offer.

The space for name and address on these letters should be left vacant and the bride's name—her married name, of course—should be filled in when the announcement is noted in the newspaper.

In connection with both the above methods—and whether or not you employ either of them—real results may be obtained by good use of your window display space. For instance, you can show the complete enameled ware outfit described above with some such sign as "This complete outfit of enameled ware for the bride—costs only $000." Even women who have been married for some years will be attracted by the sign; they will want to see what you consider a complete kitchen outfit and compare what they have at home with what you are showing. Perhaps a woman will realize for the first time that she needs a new double boiler or that she has been handicapped by not possessing some more enameled ware mixing bowls.

That is the great advantage of advertising to brides. Every woman is interested in a wedding and in a bride and in everything addressed to the new housewife. Advertising or window displays intended for her have a double pulling power because they interest every woman on earth quite as much as they do the bride herself.

The bride's kitchen idea is strikingly brought in the accompanying illustration and may be very easily and inexpensively worked out even in the smallest window. Any number of variations are possible and the general idea may be adopted to any arrangement of the existing fixtures. The main thing is to get over that "wedding feeling." Use

white for draperies—curtains at the side, the platform and the floor. Try to get a "tulle" effect—if nothing else is handy, good cheesecloth will do. Use plenty of ribbons and flowers—real or paper—especially artificial orange blossoms which may be placed around the edge of the platform. Sprinkle confetti and rice all over. Put in a pair of your wife's or daughter's dainty slippers tied up with a ribbon. Cut hearts out of red paper or silk and sew them on the curtains. Wedding rings cut out of gilt cardboard can also be effectively used. In the background show cut glass, silverware and similar articles suitable for wedding presents. Arrange the suggested outfit of enameled ware on and around the platform.

Associated Advertising Clubs of World to Meet at Atlantic City June 3 to 7.

Several hundred retailers, from large cities and small, and representing every kind of retail store, will assemble at Atlantic City, June 3 to 7, in connection with the annual convention of the Associated Advertising Clubs, to exchange their experiences of the last year and to plan for a better use of their advertising opportunities for the year to come.

The Associated Retail Advertisers, as the association is called, is a division of the advertising clubs, and the program for the Atlantic City meeting will include such speakers as Roger W. Babson, Homer J. Buckley, Joseph Appel, Charles W. Mears, Ben Nash and W. R. Hotchkin. These and other men, who have attained fame in the field of business, will spend a part of their stay in Atlantic City in a close-up study of retail advertising as it is to-day, and of its needs for tomorrow.

E. S. Goldstein, of the May Company, Cleveland, in announcing the program of the retail advertisers, stressed the fact that above all else, the program and the exhibit of retail advertising which will be a part of the great advertising exhibit of the convention, will be of practical help to the retailer who desires to make his advertising do more for him.

While attendance at the convention will be made up largely of members of the Associated Advertising Clubs, it is announced that membership is not essential to attending and obtaining full advantage of the opportunities the convention offers.

Chicago Post Master Calls for Your Co-operation in Speeding Up Mail Deliveries.

Arthur C. Lueder, Chicago Postmaster, is calling attention to the fact that the addresses of advertisements appearing in newspapers and magazines are incomplete in many instances and he wishes your coöperation in correcting this deficiency.

Postmaster Lueder's letter is as follows:

To AMERICAN ARTISAN:

On nearly 50 per cent of the advertisements which appear in newspapers and magazines the advertiser's name and city only are printed at the bottom of the advertisement, the street address being omitted. Thus, all inquiries sent in are without a street address, which not only imposes a constantly increasing burden upon the postoffice, but seriously interferes with the prompt dispatch of such mail; in fact, non-delivery is often the result of the failure to furnish a complete street address.

Not less than seventy-five thousand (75,000) pieces of mail, exclusive of that addressed to the largest and best known firms, are received daily at the Chicago Postoffice without street address, and this condition is true in a greater or less degree in all of the larger postoffices in the country. The delivery of this mail is delayed from eight to twenty-four hours.

I am sure that if you will point out to your advertisers the benefit to them to be derived from the use of a complete street and number address in their advertisements, they will not hesitate to follow the advice to use a complete street and number address even if it requires an extra line in the advertisement to do so.

Will you coöperate with us for an improved postal service to you and your patrons?

ARTHUR C. LUEDER,
Postmaster.

W. W. Thomas Hardware Company, Tampa, Florida Reorganizes and Changes Name.

The W. W. Thomas Hardware Company, 913-15 Franklin Street, Tampa, Florida, has made application for a change of name to the Thomas Hardware Company. The capital stock of the Company will also be increased to $100,000, in order to widen the scope of activity.

The owners of the Company are W. W. Thomas and W. Henry Thomas and they taken into their organization W. E. Lee. Mr. Lee is well known as a citrus grower.

One of the new departments to be added will be a complete line of house-furnishings, to include kitchen utensils, glassware, stoves, electrical goods and the like. The store will stock a complete line of builders' hardware. Sporting goods will be carried. Others lines will include roofing, paints, motor supplies and equipment.

The W. W. Thomas Company was organized in 1917, being located first at 310 Twiggs Street. W. W. Thomas will be president and general manager of the reorganized company, W. Henry Thomas its secretary and treasurer and Mr. Lee vice-president.

Commerce Commission Appeals on Mileage Book Ruling.

The Interstate Commerce Commission has appealed from the recent ruling by the Federal District Court restraining inauguration of interchangeable mileage books at a 20 per cent price reduction on fifty eastern railroads. The Commission's order for the sale of the books now stands suspended until January 1 on the railroads of the country.

Wisconsin Hardware Men Create Service Bureau for Hardware Retailers.

The Wisconsin Retail Hardware Association has created a sales and display service bureau for its members.

George K. Nitz has been appointed to direct the work of the bureau and part of his work will be to plan advertising campaigns, window and interior displays and stock arrangements.

Uncle Sam Offers Free Booklet on Investment Questions.

A government booklet called "How Other People Get Ahead" has been issued by the United States Treasury Department.

This booklet, designed particularly for persons with modest incomes, shows the necessity of exercising care in the management of resources, the beneficial effects of saving, how to differentiate between good and bad investments, the danger signs of fraudulent schemes, and the essentials of sound investment.

"Why am I not as prosperous as my neighbor, whose income is less than mine?" is one question answered by the booklet.

Copies may be obtained upon request to William B. Bosworth, Government Savings Director, 230 South La Salle Street, Chicago, Illinois.

Secretary Hodge Approves AMERICAN ARTISAN Editorial.

The following is an editorial comment by H. J. Hodge of the Western Retail Implement and Hardware Association on an editorial published in our issue of April seventh:

AMERICAN ARTISAN AND HARDWARE RECORD, in a well-written editorial, asks the question: "Are we entering upon another era of inflated prices?" It calls attention to the fact that there is a point beyond which the consuming public simply refuses to go, for the reason that those whose income is fixed can not find the money to pay the price asked. It predicts that the progress in building operations will be retarded and advises extreme caution in buying so that dealers will not suffer by a big slump such as occurred in 1920. Its admonition is, "Buy only what your needs for your regular turnover period require."

It is worthy of note that at the time when this paragraph is written, May 19, there is a very noticeable halt in building operations. "We did not prophesy," but simply drew a logical conclusion, and the conclusion was right.

Scarborough Resigns as Pasha Treasurer.

Owing to the removal of the headquarters of the Pennsylvania and Atlantic Seaboard Hardware Association to Philadelphia, Charles W. Scarborough has resigned the office of treasurer because he considers it impractical to fill these duties from Pittsburgh, the former Pasha headquarters. Mr. Scarborough's duties have consequently been assigned by the board to Sharon E. Jones, Secretary, whose title hereafter will be Secretary-Treasurer.

Although not a charter member of the Pasha, Mr. Scarborough is one of the oldest and most active members of the association, having served as its treasurer for five years, as a member of the publication committee for six years and as Secretary of the Pittsburgh Association for the past sixteen years.

Good Demand for Sharp Cutlery in Yucatan.

The Department of Commerce, through Consul O. G. Marsh, announces that there is a good demand for sharp cutlery, such as axes, butcher knives, pocket knives and tableware, in Yucatan. Axes and butcher knives are purchased in large quantities from the United States, although there is considerable competition from England and Germany for the machete trade of Yucatan. American safety razors are gradually supplanting the German-made article which formerly dominated the market.

Good Demand for American-Made Pails in Mexico.

The United States supplies about 75 per cent of the iron buckets used in Mexico, with most of the remainder coming from United Kingdom, according to reports made by the United States Department of Commerce Reports. American-made buckets of the 14-quart size retail for the equivalent of 65 cents, while of the same capacity from England sell for about 90 cents.

The report also states that there is a good market in Tientsin, China, for small tools and hack-saw blades. The superiority of American-made small tools seems to be quite generally recognized.

There is a good demand for low-grade American shovels in Argentina. The styles most commonly used are the plain-back, square-point and plain-back round point models with "D" handles.

French Tells How to Increase Paint Sales.

Manufacturers of paint have introduced several exceptionally good paint slogans, in their endeavor to educate the public to the real purpose of paint. The slogan: "Save the Surface and you Save All," speaks volumes in itself. How does your paint business run? Have you succeeded in getting paint and varnish into your customer's regular budget? Are you taking full advantage of the assistance that paint manufacturers are ready to give you free of charge?

The following is a method of increasing your paint sales very materially as set forth by C. Dunning French:

"Paint and varnish is distinctly different from hardware and these items should be classified and a head for that department should be appointed. If you have a young man in your employ who is ambitious to succeed and who has a general knowledge of your entire line, it

would be well for you to have a talk with him somewhat along this line: 'John, we sold a thousand dollars' worth of paint last year, according to our books, and it seems to me that we could sell considerably more. Do you think that if you were placed in charge of the paint department, you could build up a bigger paint business? We are perfectly willing to work out this problem with you on a bonus basis. An arrangement such as the following would be attractive: For every gallon of paint which we sell over the amount which we sold in 1922 we will give you a bonus of five or ten cents per gallon as an incentive for you to develop our paint business.'

"If this clerk has any 'pep' in him, he will devote considerable time to learning about the paint and varnish business. He will aim to talk to every manufacturer's representative that calls, and get any information he can in that way. He will study the possibilities for selling paint in his community. He will get busy and think out some scheme to increase the sales, whether by local advertising, by doorbell pulling, or what; and at the end of the year you are going to have to pay him a bonus, but in return for that bonus you will have increased your paint and varnish business wonderfully."

What the Growth of a Business Signifies.

Steam ships, great railways, skyscraping buildings and giant corporations signify nothing unless they are vitalized and energized by human thought and action. When the human mind relinquishes its hold upon these monsters of progress they are worse than useless.

You are the directing head of your business. Your business will grow or decline in proportion to the success which you attain in properly regulating and governing the several factors in that business. The fruits of your business will be in direct proportion to the success you have in securing coördination of the factors in your business. Growth is significant by reason of its causes. When an organization steadily continues to grow, the active causes are within the organization—the effects are felt by those it serves. New ideas, continued circulation of business blood, adherence to sound principles of administrations and production of craftsmanship and of service are the things that cause growth, and it is up to you, Mr. Head of the Organization, to see that these things are made to operate.

Pick out your reliable assistants and then delegate your responsibilities in such a manner that your own mind will be relieved of minor details; so that you can be free to think out ways and means of improving your sales methods and of rendering better service.

Reacting to Sincere Praise.

Little, constantly falling drops of water wear away the hardest stone. The little unostentatious, unsolicited words of praise with which our friends favor us are the things that assure us we are on the right track and urge us on to greater achievement.

Here's what A. R. Harris says:

To AMERICAN ARTISAN:

I surely enjoy reading your paper. It is full of "spice."

A. R. HARRIS.

———, Illinois, May 23, 1923.

Coming Conventions

National Retail Hardware Association and American Hardware Manufacturers' Association, Richmond, Virginia, June 18, 19, 20, 21 and 22, 1923. Herbert P. Sheets, Retailers' Secretary-Treasurer, Argos, Indiana, and Frederick D. Mitchell, Secretary-Treasurer, Manufacturers, 1819 Broadway, New York City.

Texas Association of Sheet Metal Contractors, Dallas, June 21 and 22. J. O. Walsh, 1216 Commerce Street, San Antonio, Secretary.

Western Warm Air Furnace and Supply Association, Statler Hotel, St. Louis, Missouri, June 25, 1923. J. H. Hussie, Secretary, 2407 Cuming Street, Omaha, Nebraska.

Missouri Sheet Metal Contractors' Association, Statler Hotel, St. Louis, Missouri, June 25, 1923. Otto E. Scheske, Secretary, 3818 Maffitt Avenue, St. Louis, Missouri.

The National Association of Sheet Metal Contractors, St. Louis, Missouri, June 25 to 29, 1923. E. B. Langenberg, Secretary of St. Louis Convention Committee, 4057 Forest Park Boulevard, St. Louis Missouri; E. L. Seabrook, 608 Chestnut Street, Philadelphia, Secretary.

Sheet Metal Contractors' Association of Pennsylvania, Hotel Allen, Allentown, Pennsylvania, July 26 and 27, 1923. W. F. Angermyer, Secretary, 714 Homewood Avenue, Pittsburgh, Pennsylvania.

Retail Hardware Doings

Illinois.

B. J. McKinney has sold his interest in the M. N. G. Hardware and Electrical Company at Eldorado to his partners, Karl Narans and Jack Gampher. The firm name has been changed to Narans and Gampher Hardware and Electrical Company.

John Stasiak has purchased the hardware store of Charles J. Wolfranski at LaSalle.

F. B. Wood has sold his interest in the hardware firm of Wood and Behen at Lovington to Mr. Hostetler. The new firm name is Behen and Hostetler.

D. Homer Hott, Joel S. Ray and Hugh J. Hill have opened a store at 321 North Main Street, Decatur, the firm being known as the Hott-Ray-Hill Hardware Company.

Michigan.

Jones and Taylor hardware store at Wolverine has been destroyed by fire. The loss is estimated at $10,000.

Minnesota.

P. M. Faricy has sold his hardware store at Farmington to Snyder Brothers of St. Paul.

The hardware firm of William Drollinger and Son at Stewartville has been sold to George Chandler of Rochester.

At Rosewood, Hellerud and Sagmoen have opened a hardware store.

Correll Hardware Company of Correll has been incorporated with a capital of $25,000. Incorporators are: George M. Nelson, Charles Kraft and John Kavanaugh.

Mississippi.

Charleston Hardware and Furniture Company of Charleston has been incorporated with a capital of $10,000. Incorporators are: James A. Blount, W. G. Harvey and Lucile Buckley.

Nebraska.

James Wolfe has sold his hardware business at Clarks to A. B. Bintz.

North Dakota.

Olson, Hegg and Company, hardware, at Hatton has been badly damaged by fire.

Wisconsin.

At Blanchardville, John Weckerly has purchased the interest of his partner, Melvin Kittleson, in the Blanchardville Hardware Company.

The Kruckman and Glaser Hardware Company of Burlington have moved their business to the building formerly occupied by the Burlington Cash Market.

At Highland, the Hennessey and Kruel Hardware Store has been destroyed by fire. The loss is estimated at $10,000.

Wyoming.

The Heitz Hardware Company at Rock Springs has been incorporated with a capital of $25,000.

There Is Many a Chance for a Mishap Between the Pig and the Finished Stove

Jones Tells of the More Important Steps Through Which Pig Iron Goes Before It Becomes a Stove.

THE following is a simple and yet interesting account of the various operations that are necessary in the manufacture of a stove, as told by Bolling H. Jones, Jr., Vice-President of the Atlanta Stove Works, Georgia, Alabama:

"The first thing to be considered are the raw materials entering into the manufacture of stoves," Mr. Jones explained. "Pig iron is the main raw material and owing to this it is most important that the manufacturer obtains the particular grades of iron that are best suited for the product. The majority of manufacturers buy two or three grades of analyzed pig iron and mix them carefully for the right result. Scrap iron cannot be successfully used.

"Coke is also a very important raw material, as the proper quality of iron is dependent on this item. Stove plants use what is known as 72-hour coke, which means that the coal has been burned for 72 hours in its manufacture. This rids the coal of all elements that would be detrimental in the manufacture of stoves.

"Sand probably ranks along with pig iron or possibly above it in its relation to the quality of castings made. This is the material in which the castings are moulded and must be of the right consistency and of very fine texture to produce the nice smooth castings as desired.

"The next thing to consider should be the pattern from which the many thousands of pieces are made. Patterns are generally made of iron, although they may be made of aluminum, and in some cases steel. These iron or aluminum patterns are known as working patterns, which are made from original wood patterns. When a manufacturer desires to make a new stove the first patterns are made in wood and then the working patterns are made from them. Patterns are the most expensive items in the stove industry and are the most carefully made. All patterns must fit perfectly and be correct to the smallest detail or the castings will not be satisfactory. Patterns are very carefully housed and protected, as damage to them would mean almost ruin to a manufacturer.

"Stoves usually consist of 50 or 60 parts. Each piece is made separately from its own pattern, although three or four pieces may be made in one mould at the same time. The moulders who make the various pieces use the patterns to get the proper impression in the sand mould. Moulding sand is rammed up on both sides of the pattern in a sort of box known as a flask. The pattern is then removed, leaving its impression in the sand. Holes, known as gates, are left in the sand mould for the iron to run through to the impression. When the iron cools you have an exact duplicate of the pattern.

"The iron which is to be used in pouring off the hundreds of moulds set up during the day is melted in what is known as a cupalo, which, in appearance, is very much like a huge heating stove. It is made of heavy steel plate and lined on the inside with firebrick, to withstand the terrific heat which is necessary. This cupalo is first loaded with a deep bed of coke, then a layer of iron and so on, until the amount of iron desired has been charged. As the iron would not melt under ordinary draft, a blast of air is forced under the coke bed by a large fan. This causes the iron to melt rapidly. When enough iron has melted and trickled down, the tap-hole at the bottom of the cupalo is opened and the iron runs down a trough into the waiting ladle of the moulder. The moulders then begin to pour off the moulds set up that day. Although the melting point of iron is between 2,000 and 3,000 degrees, it must be around 4,000 degrees to make stove plate, on account of the fact that stove parts are as a rule very thin. In pouring heavy heater bowls, etc., the iron may be much cooler.

"When the iron has cooled in the moulds enough to allow handling, the moulds are shaken until the sand and the piece made fall out. The appearance of these pieces at this stage is not in any way like the nice smooth castings one sees on the finished stove. They are entirely covered with sand and must be thoroughly cleaned. However, before they are cleaned they are subjected to rigid inspection for defects and the bad castings are thrown out.

"The remaining castings are then loaded into tumbling mills which are similar to large barrels. Thousands of jackstones, or iron stars, are loaded with them. The mills are revolved until the stars have knocked off the sand and the castings are perfectly clean. The sand is removed from the mills while revolving by a suction system which draws it through small holes in the end of each mill. These clean castings are then given another close inspection.

"They are then carried to the assembly room, assorted and placed in their proper shelves, ready for the mounter. His duty is to assemble the stoves properly and see that all pieces fit perfectly. After the stoves are mounted comes the most rigid inspection of all, and even the slightest flaw or defect will cause the stove to be thrown out. If found to be perfect, they are then ready for the packing department, where they are polished and where all loose pieces are taken off and wired tightly in the oven. All nickled parts are wrapped. The stove is then crated and ready for shipping."

When you read an advertisement of something new in a trade paper, don't hesitate to investigate and perhaps order a sample. You need new, salable goods as much as that advertiser needs customers.

Ohio Takes Another "Swat" at Flueless Stoves.

The following is an excerpt of a daily paper and shows the trend of public attitude toward the flueless gas stove:

"The department of health of Ohio continues its campaign against the stove without a chimney. They have thundered against it in their regular publications and they have broadcasted against it over the radio. And yet Dr. E. R. Hayhurst wrote that this winter, up to March 1, in Ohio alone, there have been fifty deaths due to carbon monoxide poisoning, a considerable part of which were caused by the use of flueless stoves.

S. S. Wyer, a consultant of the United States Bureau of Mines, the United States Bureau of Standards and the Smithsonian Institute, says:

"When gas is properly burned, the oxygen of the air unites with carbon of the gas to make carbonic acid gas, and with hydrogen of the gas to make water. Water in the air is not especially harmful and it may be helpful. Carbonic acid is only moderately harmful. It occasionally happens that the carbon of the flame does not get all the oxygen it needs and carbon monoxide is formed."

Carbon monoxide is a violent poison and one which does not betray its presence by odor, taste, feel, or even by any quickly manifested, plainly recognized symptoms. Fatal cases of carbon monoxide poisoning are frequent. Milder cases and chronic cases are far more frequent.

Wyer's simple, easily understood catechism on flueless stoves and heaters and carbon monoxide poisoning gives the following factors which may cause a burner to produce carbon monoxide:

(a) During the first few minutes' operation of any automatic water heater. (The parts chill the flame and cause the more poisonous gas to form.)

(b) When the inner cone of any blue flame impinges on a cool surface. (Causes chilling and lowers oxidation.)

(c) When a luminous flame is deflected and impinges on a cool surface.

(d) When any flame is not supplied with sufficient air.

(e) When a radiant fire heater is operated so that the radiants glow more than three-fourths of the distance from the bottom to the top.

"Flueless heating stoves are always dangerous. There are many so-called odorless smoke consuming and chimneyless gas heating appliances in use. These are always dangerous and a positive menace to health, and never ought to be used."

"Flueless heating stoves are much more dangerous than flueless cook stoves," he says. "The reason is that the amount of heat and steam in a kitchen makes ventilation of some kind imperative. The door of the kitchen is left open or is frequently opened. The door of the bathroom is kept closed. The bathroom is not well ventilated.

"Beware of the stove without a chimney."

Unique Method of Advertising Rebuilt Stoves Put Into Operation.

The experience of a stove dealer in Dayton, Ohio, will interest stove manufacturers and perhaps manufacturers of other products also, especially those whose dealers make a practice of taking used goods in partial exchange for new.

This particular dealer discovered, as many other stove dealers have found through experience, that advertising rebuilt stoves is not the same sort of an advertising problem as advertising new stoves. The dealer has generally but one or two makes of new stoves to sell. While his advertising deals with these stoves specifically, it is cumulative, and brings results steadily in proportion to its strength and frequency.

Advertising a rebuilt stove, however, is not that sort of a problem at all. The first reason why it is not is because the dealers' stock of rebuilt stoves many comprise several makes and his stock may constantly change. Advertising a particular rebuilt stove by name when he may have but one or two such stoves in stock, would represent an advertising waste when the advertising brings more buyers than there are rebuilt stoves. It is the experience of many stove dealers that better results are to be obtained when display space is used to describe the rebuilt stove department, or to describe a number of rebuilt stoves, than when separate classified advertisements are used to describe individual makes.

This dealer found by experience that it was better to tell the public that it maintained a rebuilt stove department and make them remember it by advertising than to advertise particular rebuilt stoves, as it happened to have them. The company did something in addition to using display space—more or less unconventional, but nevertheless effective for the purpose—which brought immediate results.

What it did was to make an arrangement with the best jazz band in the town to do its practicing in the company's showroom one evening a week. This fact was made the subject of an advertisement in connection with the rebuilt stove department and an invitation was extended to the public to be present.

By this means many people were attracted to the company's showroom on practice nights. The location of the showroom became very well known and the showroom itself was arranged so that everybody who came was made well aware that a number of rebuilt stoves were for sale.

Another thing which the company did was to arrange a jingle contest and offer $1 to everybody who would write and forward to the firm an acceptable jingle concerning rebuilt stoves. Every jingle accepted and published earned a dollar.

A lot of ill-feeling in this world arises from the fact that people with a real or an imaginary grievance frequently sputter around for days or weeks in a vague way instead of coming right out with it.

Advertising Copy Containing a Specific, Seasonable Offering Cannot Fail to Draw Prospective Customers and Move Your Stock.

Study the Advertisements on This Page, Then Compare Them with Your Own and Profit by What You Have Learned.

THE accompanying reprint from the Muscatine (Iowa(*Journal* is an excellent example of advertising copy announcing the spectacular clearance sale. To have quoted a few prices would have has used this space to a very good advantage.

* * *

When it comes to introducing the novel feature the B. F. Kerr & Sons Company, Columbus, Ohio, come to the fore with bang and a smash. The accompanying illustration which was taken from the Columbus, Ohio, *Citizen,* shows how the firm ran a 14-inch advertisement three columns wide pushing the Estate Gas Range. Note the introduction of the advertisement; it is such that would compel attention even though completely surrounded by other advertisements.

The explanation of the features of the 1923 model are excellent and the arrangement of these is also of the best.

Absolutely at Cost

Slaughter Sale of Aluminum Ware

Beginning Tuesday morning and continuing the balance of this week we will offer our entire stock of ALUMINUM WARE at factory cost, plus freight. No reservations, no exceptions—it all goes in this sale.

Our stock is not composed of 'wild cat' brands, made especially for special sales, but consists of standard makes such as Mirro and West Bend—that are full weight and full measure.

This is your opportunity to replenish your kitchen with the best grade of Aluminum Ware at the lowest prices.

Thompson's Hardware Store

added a little more snap to the ad, but it undoubtedly produced the desired results; namely, that of bringing people into the store. "Slaughter Sale of Aluminum Ware." That's enough to make anybody jump. Thompson's Hardware Store

THE B. F. KERR & SON CO.
Kerr's Are Agents For
Estate
GAS RANGES
Bake with Fresh Air
Pure, Fresh Air in Your Oven
AND PERFECT DISTRIBUTION OF HEAT
See the Estate Demonstrated at the Cooking School, Memorial Hall
FEATURES OF THE 1923 MODEL ESTATE GAS RANGES
ENDORSED BY GOOD HOUSEKEEPING INSTITUTE
Table Ranges—$50.50 Up
OVER THE BRIDGE TO
Kerr's
LIFETIME FURNITURE

The advertisement is complete from start to finish. The varying sizes of type used are well chosen; there are no misspelled words or glaring inaccuracies.

"Pure, fresh air and perfect distribution of heat." What more ideal condition could a housewife desire for making those fluffy, light cakes that melt in your mouth?

Extreme Caution in Buying Persists—Halt in Prices Is Healthful Business Development—Speculative Accumulation of Goods Stopped.

Buying Interest Reawakening in Non-Ferrous Metal Markets—Supreme Court Upholds Government in Copper Decision.

THE present status of business would indicate that a "buyers' strike" was in order, but business men of large experience seem to agree that at a strategic point in the upswing of business a minor reaction has occurred which should undoubtedly have the effect of encouraging caution in making commitments, and it should discourage speculation in commodities.

Such conditions as these make it appear that a healthy period of prosperous business can be looked for throughout the remainder of 1923.

The lack of buying in non-ferrous metals which had prevailed for several weeks came to an end the fore part of the week and prices took a sharp turn upward.

Copper.

Electrolytic delivered was quoted at from 15.50 cents to 15.62½ cents through May, June and July. Consumers were buying moderately for July, September and August, paying as high as 15.75 cents.

War-time prices of copper fixed by the Government were upheld by the Supreme Court in a decision rejecting the claim of L. Vogelstein & Company for a sum in excess of $400,000, alleged to have been paid for copper purchased above the Government price and resold to the Government.

The opinion of the court held that the market value of copper at the time it was taken measures the owner's compensation.

Vogelstein & Company demanded a higher price than that filed by the Government, alleging that it was compelled to pay a higher price on long-time purchases.

The court held, however, that the mere fact higher prices were paid is not evidence of the value of copper at the time it was obtained by the United States.

Tin.

There have been rapid fluctuations in the tin market, both domestic and foreign, during the week.

Dealers have bought and sold Straits at 41.75 cents for June, July and August shipment from the east, and at this level the buyers appear to outnumber the sellers.

The importers ask 42.12½ cents to 42.37½ cents for the same positions and are completely out of the running today.

The Chicago warehouse prices of tin are: Pig tin, 42½ cents, and bar tin, 44½ cents.

Zinc.

A further strengthening of the zinc market was noted this week. The unsold quota of the May production is small, while the June output is also well sold, although perhaps not to more than an average degree.

The market continued firm, but quiet at from 6.70 to 6.75 cents, St. Louis, for spot and May, with futures off from 5 to 10 points only.

The advance of about 20 points during the past few days was accomplished on a very small amount of business.

There were 125 tons of zinc exported to France May 22.

Lead.

The market was active for spot lead, which was in short supply. There was no lead available in East St. Louis basis May 23 below 7.10 cents, and only small tonnages could be had at that figure, the prices asked ranging from 5 to 10 points higher.

Consumers were covering their immediate needs more freely than for some time, and the situation appears intrinsically sound as to the early future.

Solder.

Chicago warehouse prices on solder are as follows: Warranted 50-50, $27.25; Commercial 45-55, $26.25, and Plumbers', $23.00.

Wire and Nails.

In view of the desire to keep a check upon all commitments, wire products makers continue to advocate conservative policies to their customers in the matter of bookings.

Makers are heavily obligated for 60 or 90 days ahead and the demand is large.

The falling off in the demand for wire mesh, expanded bars and wire fencing was more pronounced in the last week than in the first half of May. These departments are in need of business, but in other lines orders are still plentiful, especially from the manufacturing and merchant trade. Manufacturers are still unable to obtain all of the wire they desire.

The regular market price continues unchanged at 2.75 cents for wire and 3.00 cents for nails.

Whatever curtailment there may be in building construction, of which so much is heard at present, it is not evident in demand for nails and wire. In fact, the lessened quantity of specifications over the past two or three weeks has given place to a full volume, which is practically equal to the business during the past few months.

Prices are steady with a tendency toward premiums on the part of some makers.

The same strict procedure is being followed as before and orders are not booked until it is known just

what tonnage the buyer already has on books and usually his request is cut down.

Fall terms are being made on fencing as the spring season closes and sales are now being made for delivery at convenience during the summer.

Sheets.

The sheet market is showing a moderate degree of activity from day to day and on the whole may be considered decidedly strong.

Blue annealed sheets and galvanized sheets are much stronger than common black and automobile sheets.

It is the regular thing for blue annealed and galvanized to bring a premuim of $5.00 a ton over regular third quarter prices when the delivery is at all early.

In black sheets the premium has practically disappeared, orders that are at all attractive finding recipients at 3.85 cents, the regular third quarter price.

As to automobile sheets, there is very little business being done to test the market. The consumption is good, but it is rather well covered by purchases made some time ago.

Regular third quarter prices are 3.00 cents for blue annealed, 3.85 cents for black, 5.00 cents for galvanized and 5.35 cents for automobile sheets.

The leading interest named these prices April 26, on the occasion of opening its books for third quarter shipments, and the independents who usually sell by the quarter adopted the prices and have been covering their regular customers.

Just how much of the third quarter tonnage is now sold cannot be estimated, but there is reason to believe the proportion is well over 50 per cent.

Tin Plate.

The tin plate market has quieted down and there is only a moderate volume of inquiry in the market, although there is quite enough to maintain interest.

Regular customers of tin plate hastened to contract for third quarter when books were opened about four weeks ago, and closed so quickly that they have now bought practically all the tin plate they cared to buy.

The question now is whether the consumers have contracted for as much tin plate as they will actually need. Here and there are hints that additional tonnages may be required.

From the mill standpoint the buying was quite satisfactory, as the mills did not expect, and do not now expect, that they will be able to run at all full in the third quarter, and thus they were disposed to limit their obligations.

As to price, the range is narrower than it was a few weeks ago.

The mills, in general, sold to their regular customers at the $5.50 price, announced on April 26 by the American Sheet and Tin Plate Company and then adopted promptly by the independents.

In sales to consumers not regular customers independents have been disposed to quote $5.75 as minimum, and when the specifications were not desirable they have gone up to $3.00. The leading interest was not a factor in this business, as its regular customers took up all its prospective output for third quarter.

Prices above $5.75 are, however, somewhat exceptional now.

Old Metals.

Wholesale quotations in the Chicago district, which should be considered as nominal, are as follows: Old steel axles, $22.00 to $22.50; old iron axles, $27.00 to $27.50; steel springs, $23.00 to $23.50; No. 1 wrought iron, $17.00 to $17.50; No. 1 cast, $20.00 to $21.00, all per net tons. Prices for non-ferrous metals are quoted as follows, per pounds: Light copper, 10 cents; light brass, 5½ cents; lead, 5 cents; zinc, 4 cents; and cast aluminum, 15½ cents.

Inactivity Still Prevails in Pig Iron Market; Soundings for Third Quarter Are Beginning.

Pittsburgh No. 2 at $30; Chicago and Birmingham Markets Remain Unchanged.

THIRD quarter buying of pig iron is still held in abeyance at Pittsburgh, Pennsylvania.

Several sales of from 50 to 200 tons each have been consummated for prompt shipment, some at $30, valley, and others at $30 f. o. b. Dunbar, Pennsylvania.

Foundry iron users were about ready to close at $31, valley, when the weakness developed in the market about a week ago, but these have withdrawn their negotiations. These same manufacturers are taking every pound of their iron for second quarter delivery, however.

Steelmaking iron is particularly quiet, as there are no inquiries at all for either basic or Bessemer.

The $29, valley, market price for basic remains unchanged, with no transactions.

Malleable iron, which is quoted at $30, valley, has no inquiries.

Steady buying of pig iron for third quarter continues at Chicago, with only a small volume, however.

There is no apparent weakness and $32 furnace is being maintained.

Melters continue to persist in their demands for shipment, but labor shortages continue to cause temporary holdups in shipments.

The absorptive power of the foundries is unimpared.

Although the aggregate is not large, furnace interests in Birmingham, Alabama, continue to book some orders.

It is thought that within the near future renewed buying interest will be under way.

Production is at the maximum in this district.

The recent delays in a few instances in deliveries have not been due to transportation, because it has been good, but rather to the fact that furnace interests had oversold for delivery at a specified time.

Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS

PIG IRON.

Chicago Foundry	32 00 to 33 00
Southern Fdy. No. 2	33 01
Lake Sup. Charcoal	36 65
Malleable	32 00 to 33 00

FIRST QUALITY BRIGHT TIN PLATES.

		Per Box
IC	14x20 112 sheets	$12 45
IX	14x20	14 65
IXX	14x20 56 sheets	17 57
IXXX	14x20	18 12
IXXXX	14x20	18 65
IC	20x28 112 sheets	28 30
IX	20x28	31 05
IXX	20x28 56 sheets	16 85
IXXX	20x28	17 95
IXXXX	20x28	19 00

TERNE PLATES.

		Per Box
IC	20x28, 40-lb. 112 sheets	$25 00
IX	20x28, 40-lb. " "	27 60
IC	20x28, 30-lb. " "	21 25
IX	20x28, 30-lb. " "	23 85
IC	20x28, 25-lb. " "	20 10
IX	20x28, 25-lb. " "	22 70
IC	20x28, 20-lb. " "	17 35
IV	20x28, 20-lb. " "	19 60
IC	20x28, 15-lb. " "	15 35
IC	20x28, 12-lb. " "	14 10
IC	20x28, 8-lb. " "	12 60

COKE PLATES.

Cokes, 80 lbs., base, 20x28.	$13 15
Cokes, 90 lbs., base, 20x28.	13 30
Cokes, 100lbs., base, 20x28.	13 60
Cokes, 107 lbs., base, IC 20x28	14 00
Cokes, 135 lbs. base, IX 20x28	15 75
Cokes, 155 lbs. base, 56 sheets	8 75
Cokes, 175 lbs. base, 56 sheets	9 50
Cokes, 195 lbs. base, 56 sheets	10 30

BLUE ANNEALED SHEETS.

Base per 100 lbs.	$4 00

ONE PASS COLD ROLLED BLACK.

No. 18-20 per 100 lbs.	$5 00
No. 22-24 per 100 lbs.	4 85
No. 26 per 100 lbs.	4 90
No. 27 per 100 lbs.	4 95
No. 28 per 100 lbs.	5 00
No. 29 per 100 lbs.	5 10

GALVANIZED.

No. 16 per 100 lbs.	$5 60
No. 18-20 per 100 lbs.	5 75
No. 22-24 per 100 lbs.	5 90
No. 26 per 100 lbs.	5 95
No. 27 per 100 lbs.	6 20
No. 28 per 100 lbs.	6 35
No. 30 per 100 lbs.	6 85

BAR SOLDER.

Warranted.	
50-50 per 100 lbs.	27 25
Commercial.	
45-55 per 100 lbs.	26 25
Plumbers per 100 lbs.	23 00

ZINC.

In Slabs	6 67

SHEET ZINC.

Cask lots, stock, 100 lbs.	11 00
Less than cask lots, 100 lbs.	11 50

BRASS.

Sheets, base	20½c
Tubing, seamless, base	25½c
Tubing, brazed, base	28½c
Wire, base	21c

COPPER.

Sheets, Chicago base	24¼c
Mill Base	23½c
Tubing, seamless, base	27c
Wire, No. 9 & 10 B. & S. Ga.	22⅝c
Wire, No. 11 B. & S. Ga.	22¾c

LEAD.

American Pig	7 50
Bar	8 50
Sheet.	
Full Coils per 100 lbs.	11 25
Cut Coils per 100 lbs.	12 25

TIN.

Pig Tin	42½c
Bar Tin	44½c

HARDWARE, SHEET METAL SUPPLIES, WARM AIR HEATER FITTINGS AND ACCESSORIES.

ADZES.

Coopers'.	
Barton's	Net
White's	Net

AMMUNITION.

Shells, Loaded, Peters.	
Loaded with Black Powder	18%
Loaded with Smokeless Powder	18%
Winchester.	
Smokeless Repeater Grade	20 & 4%
Smokeless Leader Grade	20 & 4%
Black Powder	20 & 4%
U. M. C.	
Nitro Club	20 & 4%
Arrow	20 & 4%
New Club	20 & 4%
Gun Wads—per 1000.	
Winchester 7- 8 gauge	10&7½%
" 9-10 gauge	10&7½%
" 11-28 gauge	10&7½%

ASBESTOS.

Paper up to 1/16	6c per lb.
Rollboard	6¼c per lb.
Millboard 3/32 to ¼	6c per lb.
Corrugated Paper (250 sq. ft. to roll)	$6.00 per roll

AUGERS.

Boring Machine	40&10%
Carpenter's Nut	50%
Hollow.	
Stearns, No. 4, doz.	$11 50
Post Hole.	
Iwan's Post Hole and Well	35%
Vaughan's, 4 to 9 in.	$15 60

AXES.

First Quality, Single Bitted (unhandled, 3 to 4 lb., per doz.	$14 00
Good Quality, Single Bitted, same weight, per doz.	13 00

BARS, CROW.

Steel, 4 ft., 10 lb.	$ 80
Steel, 5 ft., 18 lb.	1 40
Pinch bars, 5½ ft., 24 lb.	1 60

BARS, WRECKING.

V. & B. No. 12	$0 34
V. & B. No. 24	0 43
V. & B. No. 324	0 57
V. & B. No. 30	0 48
V. & B. No. 330	0 63

BITS.

All Vaughan and Bushnell.	
Screw Driver, No. 30, each	$ 27
Screw Driver, No. 1, each	16
Reamer, No. 80, each	41
Reamer, No. 100 each	41
Countersink, No. 13, each	20
Countersink, Nos. 14-15 each	27

BLADES, SAW.

Wood.
Atkins 30-in.

Nos.	6	40	26
	$8 90	$9 45	$5 40

BLOCKS.

Wooden	45%
Patent	45%

BLOW TORCHES (See Firepots).

BOARDS.

Stove.	Per Doz.
26x26, wood lined	$14 45
28x28, " "	16 95
30x30, " "	19 00
26x26, paper lined	8 15
28x28, " "	9 10
30x30, " "	10 80
Wash.	
No. 760, Banner Globe (single) per doz.	$5 25
No. 652, Banner Globe (single) per doz.	6 75
No. 801, Brass King, per doz.	8 25
No. 860, Single—Plain Pump	6 25

BOLTS.

Carriage, Machine, etc.	
Carriage, cut thread, ⅜x6 and sizes smaller and shorter	45-5%
Carriage sizes, larger and smaller and shorter	40-5%
Machine, ⅜x4 and sizes smaller and shorter	50%
Machine, sizes larger and longer than ⅜x4	40-10%
Stove	70-5%

BRACES, RATCHET.

V. & B. No. 444 8 in.	$4 54
V. & B. No. 222 8 in.	3 89
V. & B. No. 111 8 in.	3 55
V. & B. No. 11 8 in.	3 02

BURRS.

Copper Burrs only	30%

BUTTS.

Steel, antique copper or dull brass finish—case lots—3½x3½—per dozen pairs	$3 24
4x4 " " "	4 44
Heavy Bevel steel inside sets, case lots—per dozen sets	7 20
Steel bit keyed front door sets, each	1 75
Wrought brass bit keyed front door sets, each	3 40
Cylinder front door sets, each	7 50

CARRIERS.

Hay.	
Diamond, Regular each, net	
Diamond, Sling " "	

CATCHERS, GRASS.

Wire frame, adjustable bottom, white duck, for 12" to 16" mowers, dozen	$9 00
Same kind for 16" to 20".	10 50

CEMENT, FURNACE.

American Seal, 5 lb. cans, net	$ 45
" " 10 lb. cans, "	90
" " 25 lb. cans, "	2 00
Asbestos, 5 lb. cans "	45
Pecora per 100 lbs.	7 51

CHAINS.

Proof Coil, ⅜" 100 lbs.	$ 9 75
Amercain Coil	40-10%
Electric Cow Welded Ties No. 00, 4½, per doz.	3 00

CHIMNEY TOPS.

Iwan's Complete Rev. & Vent.	30%
Iwan's Iron Mountain only	35%

CHISELS.

Cold.	
V. & B. No. 25, ¼ in., each	$0 26
V. & B. No. 25, ⅝ in., each	41
Diamond Point.	
V. & B. No. 55, ¼ in.	0 31
V. & B. No. 55, ½ in.	0 48
Firmer Bevelled Round Nose.	
V. & B. No. 65, ¼ in.	0 29
V. & B. No. 65, ½ in.	0 40
Socket Firmer.	
Cape.	
V. & B. No. 50, ⅜ in.	0 31
V. & B. No. 50, ¾ in.	0 57

CHUCKS, DRILL.

Goodell's, for Goodell's Screw Drivers	List less 35-40%
Yankee, for Yankee Screw Drivers	$6 00

CLAMPS.

Adjustable.	
Martin's	30%
No. 63, Screw	20%
No. 100, Door (Stearns) doz.	$22 00
Carpenters'.	
Steel Bar	List price plus 20%
Carriage Makers'.	
2½-inch per doz.	$ 7 00
5 - " "	14 00
8 - " "	28 00
12 - " "	42 00
Hose.	
Sherman's brass, ¾-inch per doz.	$0 48
Double, brass, ¾-inch, per doz.	1 20

CLIPPERS.

Bolt (Carolus).	
No. 0	$2 50
No. 1	3 25
No. 3	4 25

CLIPS.

Damper.	
Acme, with tail pieces, per doz.	$1 25
Non Rivet tail pieces, per doz.	25
Non Rivet Clips	90
Hame	64

COPPERS—Soldering.

Pointed Roofing.

3	lb. and heavier per lb.	40c
2½	lb. "	45c
2	lb. "	48c
1½	lb. "	55c
1	lb. "	60c

CORD.

No. 7 Std. per doz. banks	$10 80
No. 8 " " " "	12 50

COUPLINGS, HOSE.

Brass per doz.	$2 25

CUT-OFFS

Standard gauge	35%
26 gauge	20%
Kuehn's Korrekt Kutoffs:	
Galv., plain, round or cor. rd.	
Standard gauge	40%
26 gauge	10%

DAMPERS, STOVE PIPE.

Diamond.	
6-inch per doz.	$1 65
Cast "American."	
6 inch per doz.	$1 55
7 " " "	2 25
8 " " "	3 55
9 " " "	5 30
10 " " "	6 60
12 " " "	8 00
Check.	
7 inch, each	$1 00
8 " "	1 25
9 " "	1 50
10 " "	1 75
12 " "	2 25
Hot Air	40-10%

DIGGERS.

Post Hole.	
Iwan's Split Handle (Eureka)	
4-ft. Handle per doz.	$14 00
7-ft. Handle per doz.	36 00
Iwan's Hercules pattern, per doz.	14 90

DRILLS.

V. & B. Star, 12-inch Length.	
¼, 5/16 and ⅜, each	$ 35
⅝, each	36
1, each	54
1¼, each	81
V. & B. Star, 18-inch Length.	
5/16 and ⅜, each	$ 33
⅝, each	45
1, each	69
1¼, each	1 05

EAVES TROUGH.

Milcor	
Galv. Crimpedge, crated	70-5%

ELBOWS—Conductor Pipe.

Galvanized Steel, Tin and Terne Plain Round or Round Corrugated	
2 to 6 inch, Std. gauge	60%
2 to 6 inch, 26 gauge	40%
2 to 6 inch, 24 gauge	10%
Milcor	
Galv., plain or corrugated, round flat.	
Crimp, Std. gauge	60%
26 Gauge Std. gauge	40%
24 Gauge Std. gauge	10%
Square Corrugated.	
Standard gauge	45%
26 gauge	30%
Milcor	
Standard gauge	45%
26 gauge	30%
Portico Elbows.	
Standard Gauge Conductor Pipe, plain or corrugated.	
Not nested	70 & 5%
Nested solid	70 & 5%

ELBOWS—Stove Pipe.

1-piece Corrugated. Uniform.

	Doz.
5-inch	$1 45
6-inch	1 60
7-inch	2 10

Special Corrugated.

	Doz.
6-inch	$1 45
7-inch	1 75